DOCUMENT RESUME

ED 198 296 CE 027 946

TITLE	Examination of the Health Occupations Education Curriculum from a Futurist Perspective: I.
INSTITUTION	City Univ. of New York, N.Y. Inst. for Research and Development in Occupational Education.; New York State Education Dept., Albany. Office of Occupational and Continuing Education.
REPORT NO	CASE-26-80
PUB DATE	Oct 80
GRANT	VEA-C079-3A-1377-GS
NOTE	252p.; Some pages will not reproduce well due to light, broken print.
EDRS PRICE	MF01/PC11 Plus Postage.
DESCRIPTORS	*Allied Health Occupations Education; Competence; Curriculum; Curriculum Evaluation; *Educational Needs; *Futures (of Society); *Health Needs; *Health Occupations; Health Personnel; *Job Skills; Labor Needs; Long Range Planning; Medical Services; Needs Assessment; Secondary Education; Vocational Education

ABSTRACT

A project examined the curriculum in the health occupations program to determine what curriculum changes will be necessary to keep pace with and anticipate advances in health occupations. A statewide Texas health occupations education review committee composed of employers, graduates, educators, a union representative, and representatives from related areas held three committee meetings and one organizational meeting. A total of seventeen reports were presented at these meetings. Report topics included manpower projections for the health occupations; trends in health care delivery and consequences for the health occupations; the determination of health care in the future; the current status and future implications of computer utilization in health delivery systems; alternative futures for auxiliary health personnel; health careers in education in California secondary education, adult education, and regional occupational programs; the future of allied health education in the eighties; health occupations education in New York State; the preparation and role of the licensed practical nurse; competencies needed for a health team member with a secondary school education; competencies needed for dental health assistants in the future; competencies in collaboration and caring; a personnel executive's view of occupations programs, and reactions to committee activities from the field. (Text of all reports are included.) (MN)

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ED198296

EXAMINATION OF THE HEALTH OCCUPATIONS EDUCATION CURRICULUM FROM A FUTURIST PERSPECTIVE: I

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Center for Advanced Study in Education
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in cooperation with the
OFFICE OF OCCUPATIONAL AND CONTINUING EDUCATION
Division of Occupational Education Instruction
The New York State Education Department
University of the State of New York

CASE #26-80
October 1980

The program reported on herein was performed under VEA Grant #C079-3A-1377 GS.

CE 027 946

Foreword

The Institute for Research and Development in Occupational Education (IRDOE) has had a continuing interest in assuring that occupational education programs prepare students with skills relevant to the jobs they will assume in business and industry. This interest began with an IRDOE study which recommended changes needed in the bookkeeping curriculum to make it articulate with the competencies required of bookkeeping clerks in industry. A succeeding IRDOE project examined the New York State business education curriculum in terms of the degree to which it would prepare graduates with the types of skills required by employers at the turn of the century. This attempt to make curriculum modifications from a futurist perspective was an important break-through in occupational education in general, since the major aim of such programs is to prepare students with skills relevant to future employment.

It is, therefore, with great pleasure that IRDOE has undertaken a similar project in Health Occupations Education. The rapid pace of technological change in the allied health areas makes the examination of this curriculum from a futurist perspective an important item in the agenda of keeping occupational education programs relevant to the needs of employers. Interested readers who share the concerns of keeping curricula relevant to emerging concerns are invited to exchange information regarding various issues addressed in this document.

Lee Cohen, Ph.D.
Director, IRDOE

Acknowledgement

The Institute for Research and Development in Occupational Education (IRDOE) has acted in the role of facilitator for the work of the Statewide Health Occupations Review Committee during the last year. The Institute assumed major responsibility for providing consultation and input to the Committee and State Education Department officials regarding all phases of this project. In addition, IRDOE had the responsibility for the selection of speakers for Committee meetings, making meeting arrangements and handling the administrative arrangements required by the Committee, Regional Observers and consultants to the project. Finally, IRDOE assumed major responsibility for disseminating Committee activities to the educational community, to employers, and to other interested individuals by preparing a series of Newsletters distributed by the 14 Regional Observers who are a part of the project. The Institute also coordinated the procedure of providing the Committee with reactions from the field to its activities as reported by the Regional observers.

This project has been fortunate to receive the assistance of colleagues at IRDOE, the Center for the Advanced Study of Education (CASE), and from the faculty and staff of the City University of New York in general. Of special importance has been the assistance of project associate Ms. Mara Zibrin who discharged her major responsibilities for all phases of the project cheerfully and with extraordinary competence. Many other people contributed ideas, recommendations, and suggestions to help facilitate work of the committee. I would hereby like to thank them all for their help.

The work of the Institute was helped immeasurably by the continuing support of a number of individuals in the State Education Department. Dr. Ruth Ellen Ostler, Chief, Health Occupations Education, provided continual encouragement and support and was generous with her time in helping to arrange the multitude of details required for the conduct of the Committee's work. Dr. Willard R. Daggett, Manager of Futuring Activities for the Division of Occupational Education, facilitated our work immeasurabley by sharing insights he gained as Chair of the Business Education Review Committee during that futuring project. The planning and organization of this project could not have been accomlished without his input at all stages of our work. Dale M. Post, Director of the Division of Occupational Education Instruction, has assisted immeasurably in giving concern, time and support for the conduct of this project. In a time of shrinking educational resources he has demonstrated farsightedness and vision in his unstinting support of project activities. Assistant Commissioner for Occupational and Continuing Education Gerald L. Freeborne has demonstrated educational statesmanship in supporting futuring in occupational education in general and as a major tool for curriculum redesign. Without their continuing support the conduct of this project would have been an impossible task.

This project has enjoyed the active support of an internal coordinating committee within the New York State Education Department. William Boudreau, Alan Robertson, Tom Sheldon, and Robert Ullery, and members of the internal coordinating committee gave generously of their time, effort and advice at all phases of the project. We hereby express our gratitude to them all.

Sigmund Tobias
Project Director

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Members of Statewide Health Occupations Education Review Committee

Committee Member	Institutional Affiliation	Representation
Thomas A. Castelli	Director of Occupational Ed. Rockland County BOCES 61 Parrott Road West Nyack, NY 10994	(1) Education Occupational Ed. Director
Dorothy E. Fisk	Director, Health Programs Oswego County BOCES Adult Education Center 257 W. Fourth Street Oswego, NY 13126	(2) Education Health Occupations Education Coordinator
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Joan B. Penrose	Professor, New York Institute of Technology Balding House, PO Box 170 Old Westbury, NY 11568	(7) Health Occupations Teacher Educator

Statewide Health Occupations
Education Review Committee (cont.)

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Louis L. Levine	Vice President for Public Affairs Blue Cross-Blue Shield of Greater New York 3 Park Avenue-27th Floor New York, NY 10016	(9) Major Health Insurance Company
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Sandra P. Benedict	Director of Patient Care Services--NYS Health Facilities Association, Inc. 290 Elwood Davis Road PO Box 4938 Syracuse, NY 13221	(13) Employer Nsg Hm Rep.
Michael Vanko	Associate Director for Albany Medical Center Hospital New Scotland Avenue Albany, NY 12208	(14) Employer (Med Lab)

Statewide Health Occupations
Education Review Committee (cont.)

Committee Member	Institutional Affiliation	Representation
Richard A. Valente	Dental Office 4220 Harlem Road Snyder, NY 14226	(15) Employer (Dental Field)
Leo Kogan	Mandi School for Medical and Dental Assisting 254 West 54th Street New York, NY 10019	(16) Private School Education Sector
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Recorder

Barbara Pickaard	Biology-Medical Lab. Dept Hudson Valley Comm. College 80 Vandenburg Avenue Troy, NY 12180

Regional Observers to Statewide Review Committee

Regional Observer	Institutional Affiliation	Region
John C. Thomas	Coordinator of Project Peers Suffolk County BOCES #2 Brookhaven Career Center Martha Avenue Bellport, NY 11713	1-Suffolk and Nassau Counties
Vivian Broaddus	Assistant Principal Clara Barton High School 901 Classon Avenue Brooklyn, NY 11225	2-NYC, Bronx, Kings Brooklyn, Queens, Richmond-Staten Island Counties
Mavis Swire	Assistant Principal Julia Richman High School 317 East 67th Street New York, NY 10021	2-NYC, Bronx, Kings Brooklyn, Queens Richmond-Staten Island Counties
Beverly H. Delano	Health Occupations Ed. Coordinator Ulster County BOCES Occupational Center Route 9W Port Ewen, NY 12466	3-Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester Counties Major City: Yonkers
Angelina Rivers	Health Occupations Ed. Coordinator Albany City School District 470 Myrtle Avenue Albany, NY 12208	4-Albany, Columbia, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady and Schoharie Counties Major City: Albany
Joyce Lemieux	Health Occupations Ed. Coordinator Northwest Technology St. Lawrence County BOCES Park Street Ogdensburg, NY 13669	6-Jefferson, Lewis and St. Lawrence Counties
Athalie Wiley	Work Study/Job Placement Coordinator Madison-Oneida Area Occupational Ed. Center Spring Road Verona, NY 13478	7-Herkimer, Madison, and Oneida Counties

Regional Observers to Statewide Review Committee (cont.)

Regional Observer	Institutional Affiliation	Region
Elaine Senn	Instructor, Dental Assisting Broome-East Tioga Occupational Center Upper Glenwood Road Binghamton, NY 13905	8-Broome, Chenango, Delaware, Greene, Otsego, and Tioga Counties
Julienne S. Webster	Instructor, Health Assisting Cortland-Madison BOCES McEvoy Educational Center Clinton Avenue Extension Cortland, NY 13045	9-Cayuga, Cortland, Onondaga, Oswego, and Tompkins Counties; Major City: Syracuse
Josephine Colacino	Instructor, Nurse's Assistant Program Finger Lakes Occupational Center Stanley, NY 14561	10-Genesee, Livingston, Monroe, Seneca, Wayne, Wyoming, and Yates Counties; Major City: Rochester
Marilyn Lynough	Health Occupations Education Coordinator Schuyler-Chemung-Tioga BOCES Pauline E. Bush Area Occupational Center 431 Philo Road Elmira, NY 14903	11-Chemung, Schuyler, and Steuben Counties
Mary M. Hahn	Health Occupations Education Coordinator Erie County BOCES #1 2 West Pleasant Avenue Lancaster, NY 14086	12-Erie, Niagara, and Orleans Counties Major City: Buffalo
Marie Pavia	Instructor, Health Services South Cattaraugus Area Occupational Center RD #1, Box 424B Olean, NY 14670	13-Allegany, Cattaraugus, and Chautauqua Counties
Joanne Donohue	Director of Nursing North Country Community College 20 Winona Avenue Saranac Lake, NY 12983	5-Clinton, Essex, Franklin

Introduction

The aim of this project is to examine the curriculum in the Health Occupations programs from a futurist perspective. The choice of this perspective is dictated by the fact that new developments and greater use of advanced technology have revolutionized many occupations. These changes have resulted in new practices and procedures in many occupations which, in turn require new competencies of employees--especially entry level employees. It is, therefore, necessary to examine whether the competencies taught in Health Occupations Education programs are those considered most important for potential employers at present and in the future. The purpose of this project, then, is to study these new developments and the implications they have for the competencies required of entry level employees in the Health Occupations so that their educational preparation may continue to keep pace with and anticipate advances in knowledge and practice.

The model adopted to study the Health Occupations curriculum is similar to that used in a related project examining the Business Education curriculum.[1] That is, a Statewide Health Occupations

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[1] Tobias, Sigmund. Statewide Business Evaluation Committee. Institute for Research and Development in Occupational Education. Center for Advanced Study in Education. The Graduate School and University Center of the City University of New York, 1977. CASE #23-77.

Tobias, Sigmund. Continuation of Futuring the Business Education Curriculum Needs. Institute for Research and Development in Occupational Education. Center for Advanced Study in Education. The Graduate School and University Center of the City University of New York, 1978. CASE #12-78.

Education Review Committee was appointed for purposes of conducting this study. The Committee was composed of employers of Health Occupations program graduates, educators, representatives from other areas having close relationships with Health Occupations and a union representative. A listing of the Committee members, their institutional affiliations, and the interests they were selected to represent appears before the introduction to this document. The charge to the Committee by Commissioner Gerald L. Freeborne, was to examine the Health Occupations curricula at the secondary school level and those adult programs which were non-degree granting.

Since the Committee's work involved examining the Health Occupations curriculum, it was considered important to have effective communications with various segments of the field. Fourteen Regional Observers were appointed for purposes of conducting two way communication. That is, the Regional Observers role was to disseminate news about the Committee's deliberations to the field, and report back the reactions of teachers, coordinators, employers and other interested individuals regarding the Committee's deliberations. A listing of the fourteen Regional Observers attached to the Committee and their titles, together with the Regions represented appears immediately following the listing of the Committee members.

Summary of Committee Activities January to September, 1980

There were a total of three committee meetings during this period, and one organizational meeting attended only by the Regional Observers and project staff. This paper will summarize the major activities at each of these meetings. Copies of papers delivered at these gatherings are reproduced later in this report.

Meeting with Regional Observers

The Regional Observers and project staff met in Albany, New York on February 7th and 8th, 1980.

The basic purpose of this meeting was to orient the Regional Observers to the general purposes of the project and their particular role in it. In addition, the meeting was intended to decide upon the type of dissemination strategies to be used by the Regional Observers in their dissemination activities.

The meeting was addressed by Associate Commissioner of Occupational and Continuing Education Gerald L. Freeborne who spoke to the Observers regarding the high hopes the State Education Department had for this project in general, and the important role the Regional Observers would have in it. Dr. Willard R. Daggett, Chief of the Bureau of Business Education then talked to the Observers regarding his experiences in the Business Education Futuring Project. He impressed upon the Observers the importance of putting their biases aside and bringing back to the field reports of Committee activities which were correct, clear, concise and consistent.

During the discussion a variety of dissemination strategies were considered. It was agreed that a Newsletter, copies of which are included in the Appendix, descibing Committee activities would be prepared and distributed by each of the Regional Observers to educators, employers, and other interested individuals in their regions. The Newsletter would also have provisions for gathering input to the Committee from the field. In addition, a variety of other dissemination strategies were discussed, such as making presentations at professional associations dealing with topics appropriate to the Health Occupations, forming regional advisory committees and speaking at local meetings such as superintendent's days.

First Committee Meeting April 23-25, 1980.

This meeting was attended by the Committee and the Regional Observers. The meeting was addressed by Commissioner Gerald L. Freeborne, Supervisor Dale Post, and Dr. Ruth Ellen Ostler, Chief, Bureau of Health Occupations Education.

The Committee was also addressed by a number of experts from a variety of fields important to the Committee's task. Professor Herbert L. Bienstock, former Regional Commissioner of Labor Statistics, and an expert in the human resources area, examined the future human resources picture in the Health Occupations. Mr. Irwin Shenker, Vice-President of Group Health, Inc., and former Vice-President of Hillcrest Hospital spoke to the Committee regarding career ladders in the Health Occupations. Professor Catherine Riessman, of Smith College, an expert in the sociology of the health delivery system addressed those issues. Dr. Clement Bezold, Director, Institute for Alternative Futures, Washington D.C., presented a futurist perspective involving the health deliversy system. Mr. John Gall from El Camino Hospital in the San Francisco area, spoke to the Committee regarding developments in the data processing area and the implications for the health occupations.

The committee was also addressed by a number of educators. Professor Helen K. Hickey, Associate Dean, Sargent College of Health Professions, Boston University and Professor Polly Fitz, Dean, School of Allied Health Professions, University of Connecticut, addressed the Committee regarding problems in the health occupations as seen by

educators. Mrs. Beverly Campbell, of the California State Education Department presented the modifications made in the Health Occupations programs in California. Dr. Willard R. Daggett, manager of futuring activities for the Division of Occupational and Continuing Education, New York State Education Department, addressed the Committee on the financial and demographic factors applying to secondary education in general and occupational education in particular.

This initial meeting was open to the public and attended by the project's Internal Coordinating Committee, the entire staff of the Health Occupations Education Bureau, interested persons from the State Education Department, other educators, and members of the public.

After the presentations the Committee, in executive session, met for organizational purposes, in order to formulate plans for succeeding sessions. It was suggested that a union representative be added to the Committee. Agreement was reached on meeting dates and sites, and on a specific agenda for the next meeting. The next session was to be devoted to a study of the present Health Occupations program with a report on its size, structure, and student population to be presented by members of the Health Occupations Bureau.

Second Meeting--June 18-20, 1980.

This meeting was held in Swan Lake, New York. Mrs. Donna Ahnert, representing the New York State United Teachers joined the meeting as a new Committee member representing organized labor.

A panel of Regional Observers summarized reactions from the field regarding the Committee's work. A detailed report on the present

Health Occupations Education program was then presented by Dr. Ostler. The Committee then deliberated on a number of alternative structures by which the Health Occupation Program could be reorganized. It is important to note that this reorganization did not imply reduction of any of the Health Occupations programs. Instead, it was hoped that reorganization would improve the effectiveness of the Health Occupation program and make it easier to revise specific programs to keep pace with rapid technological change.

The outcome of the Committee deliberations is summarized in Newsletter No. 3 which can be found in the Appendix.

Third Committee Meeting: September 25th and 26th.

The third meeting of the Committee was held in New York City. The Committee was addressed by a panel of Health Occupations personnel experts and by a panel of first line supervisors of Health Occupations personnel.

The panel of personnel experts consisted of Stuart L. Hirsch, Assistant Dean, New York University, College of Dentistry, Norman L. Metzger, Vice-President for Personnel, Mount Sinai Medical Center, New York, and Sandra L. Routledge, Employee Health Nurse, Providence Medical Center, in Seattle, Washington.

The panel of first line supervisors consisted of: Ms. Joan Borden, Director of Inservice Training of St. Johnland Nursing Home, Long Island, New York; Miss Myra Gordon, Curriculum Director, TEAM

Program, School of Dentistry, SUNY Buffalo, and jointly by Mrs. Mary Chicola and Jean Padlo, Nursing Director and Assistant to the Nursing Director respectively, of St. Francis Hospital, Olean, New York.

After these presentations the Committee, in executive session, deliberated upon the structure of competencies to be required of Health Occupations Education graduates. These deliberations led to a series of preliminary recommendations which are summarized in Newsletter No. 4 a copy of which is in the Appendix.

The Committee also established an agenda for the next meeting, to be held in Buffalo, New York on December 11 and 12, 1980. This meeting will be devoted to a consideration of the constraints upon the work of the Committee, such as the accreditation and certification requirements for a variety of job titles considered by the Committee, and the resources available with respect to similar efforts conducted by professional societies, and resources available in New York State.

Charge to the Committee

Gerald L. Freeborne

I want to begin by expressing our appreciation for your willingness to serve on this project either as a Committee member or as a Regional Observer. I know that all of you are leaders in your professions and have the busy schedules that go with this kind of prominence. Your willingness to give of your time for this effort is, therefore, very much appreciated.

This project is devoted to examining the curriculum of the Health Occupations from a futurist perspective. Our office has three overall priorities which we are attempting to address through this major undertaking: 1) providing students with relevent skills for employment in the future; 2) insuring that the needs of business and industry in New York State for competently trained employees are met, in this particular case the needs of the Health industry; 3) doing all we can to strengthen the economy of New York State. We feel that the work of this Committee is important in insuring that these three goals are achieved.

A key element in the process of examining a curriculum and making recommendations regarding its eventual modification is the concept of ownership. If this Committee ultimately proposes modifications in the Health Occupations curriculum it is vital that the Committee, the Regional Observers and the educators ultimately charged with implementing this curriculum have a sense of ownership of that curriculum. Our experience in examining the business education curriculum from the futurist perspecttive has clearly shown that progress in implementing changes is critially dependent on the teachers in the field, their supervisors, and the general

educational establishment experiencing a sense of ownership of the revised curriculum. It is our hope that the Regional Observers who are a part of this project will be effective two-way dissemination agents for the work of this Committee. In this way, the work of the Committee can be disseminated rapidly to the field, and the Regional Observers can, then, relay to the Committee reactions from the field regarding its work. By providing such effective communication it is hoped that the teachers and supervisors who will ultimately implement the recommendations of the Committee will have a sense of ownership of the revised curriculum.

Our experience with the business education curriculum has indicated to us that the futuring process can be an important tool for the accomplishment of the major objectives of the Division of Occupational and Continuing Education. Let me describe briefly how I see this process working.

In the initial phase of this process the Committee needs to look at the future work environment. This step involves getting a variety of experts to ptoject their views of the future work environment. From these projections the Committee needs to determine what are the skills or competencies that graduates of these programs will need to function effectively in the future work environment. These considerations lead to an initial suggestion regarding a framework for a revised curriculum.

At this stage it is important to recognize that the Committee's initial recommendations will be subject to intense criticism from the field. Let me suggest to you that this is a trying period for the Committee since the criticism can be intense and protracted. At this time it is most useful to focus on the needs of the students, the future, and listen carefully to the views of the future employers of these students. Educators

should be consulted in determining the best way to deliver th skills. Employer, however, should have the main voice in determining the types of skills the students will be required to use on the job. Let me reemphasize that in this process you shouldn't limit your views only to the technical skills. Of equal and perhaps even greater importance are the non-technical basic skills on which some of the more advanced technical comptencies are based.

Once the Committee makes its preliminary recommendations, meetings in order to obtain reactions to these recommendations, are appropriate. These meetings lead to the formulation of a final framework embodying the Committee's final recommendations. These recommendations are, in turn, discussed with the State Board of Regents and submitted for their consideration.

I am sure that you will recognize that this is a demanding assignment for which you have volunteered. Let me also indicate that I am positive that you will be proud of your accomplishments. The model of looking at Occupational Education curricula from the futurist perspective is a pioneering one. To my knowledge there is no comparable effort occuring anywhere in the country. You can rightfully take pleasure in participating in this pioneering venture. You have my personal assurance of support for this project and a guarantee that I will personally review major developments in the life of this project and its final recommendations. My best wishes to you all for the next two years of the project's duration. I know that this is going to be as informative and exciting a time as it is likely to be a lively one when your work has come to an end.

MANPOWER PROJECTIONS FOR THE HEALTH OCCUPATIONS

Herbert Bienstock
City University of New York

Essentially, this topic involves two aspects: First, there is the matter of human resource projections in general and, second, there is the specific matter of the health occupations. The health occupations will be substantially affected by a whole array of forces that are at work in the general economy of which they are a part.

From the post-World War II period to the present, this country's human resource posture was dominated by three major waves of change: first, there was the shift from the rural south to the urban north, a result of the agricultural-industrial revolution which caused a decline in the number of farm jobs from 8 million to less than 3 million; second, there was the increase in the number of women in metropolitan areas that became part of the labor market; third was the impact of dramatic fertility changes. During the post-World War II years, there was a baby boom of major proportions: one million more children were born in 1947 than in 1946 -- a 40 percent increase in one year. The babies of the late 40's became the school children on double session in the 50's; by the 60's they were entering college and by the 70's they were entering the labor market as college graduates. Meanwhile, the economy was changing: We lost 2 million blue collar jobs but gained 750,000 professional, technical and managerial jobs.

In addition to the three waves mentioned above, there was a fourth wave; The baby bust of the 1960's and 1970's, during which live births

declined from about 4 million in 1960 to about 3 million in the later 1970's. In other words, the birth level dropped to what it was prior to the post-World War II baby boom.

The two demographic factors will result in a human resource shortage beginning around 1984-1985. As the children born in the post-World War II baby boom get increasingly older, there will be a greater demand for health services. The providers of these health services will derive from those born during the period of baby bust. In other words, the need for services will continually increase, while the number supplying these services will continually diminish. In the job market, two out of every three openings represent replacement; one out of three represents growth. In large metropolitan areas, like New York City, there will be a large number of vacancies in the health occupations through the replacement factor alone. Added to this will be the continual growth of the aged population.

Our occupational projections indicate greater than average growth for dental assistants, dental hygienists, dental laboratory technicians, emergency medical technicians, medical records technicians, practical nurses, occupational therapists assistants, physical therapists assistants and so forth. As the opportunities for school teachers might be expected to increase as the children of the baby boom become the middle-aged and aged adults of the future.

For specific statistics, you are referred to "Occupational Projections and Training Data," Bulletin 2020 of the U.S. Bureau of Labor Statistics, and "Job Outlook in Brief" found in the September, 1978 issue of Occupational Quarterly Outlook, published by the Bureau of Labor Statistics, Washington, D.C.

Employment Prospects in Selected Health Occupations through 1985*

Occupation	Estimated employment 1976	Average annual openings 1976-85	Employment Prospects
Dental occupations			
Dental assistants	135,000	13,500	Employment expected to grown about as fast as average due to population growth, increased awareness of importance of dental care, and expansion of prepayment arrangements. Opportunities should be very good.
Dental hygienists	27,000	5,100	Employment expected to grow much faster than average because of expanding population and growing awareness of importance of regular dental care. Opportunities for jobs should be good.
Dental laboratory	42,000	3,700	Employment expected to grow faster than average due to expansion of dental prepayment plans and increasing number of older persons who require dentures. Favorable opportunities for graduates of approved programs.

*These excerpts are taken verbatim from "Job Outlook in Brief" found in the September, 1978 issue of Occupational Quarterly Outlook, published by the Bureau of Labor Statistics, Washington, D.C.

Occupation	Estimated employment 1976	Average annual openings 1976-85	Employment Prospects
Medical Technologist, technician, and assistant occupations			
Electrocardiograph technicians	12,000	700	Employment expected to grow faster than average as greater reliance placed on electrocardiographs to diagnose heart diseases and their use increases in physical examinations of older patients.
Electroencephalographic technologists and technicians	4,300	300	Employment expected to grow faster than average due to increased use of EEG's in surgery and in diagnosing and monitoring patients with brain disease.
Emergency medical technicians	287,000	37,000	Employment expected to grow much faster than average due to increasing public awareness of need for better emergency medical services.
Medical laboratory workers	240,000	20,000	Employment expected to grow faster than average as physicians make wider use of laboratory facilities. Job opportunities should be favorable.
Medical records technicians and clerks	57,000	9,000	Employment expected to grow much faster than average as the number of health insurance, Medicare, and Medicaid claims increases the need for more complete medical records. Favorable opportunities for those with specialized training.
Operating room technicians	30,000	2,100	Employment expected to increase faster than average as technicians assume more of the routine nursing tasks in operating rooms. Good opportunities especially for graduates of 2-year community and junior college programs.

Occupation	Estimated employment 1976	Average annual Openings 1976-85	Employment prospects
Optometric assistants	11,800	700	Employment expected to grow faster than average due to greater demand for eye care services. Job opportunities for persons who have completed a formal training program should be excellent.
Radiologic (X-ray) technologists	80,000	6,300	Employment expected to expand faster than average as X-ray equipment is increasingly used to diagnose and treat diseases. Applicants may face competition for jobs.
Respiratory therapy workers	36,000	4,700	Employment expected to grow much faster than average due to new applications of respiratory therapy in treating deseases. Job opportunities should be good.
Nursing occupations			
Registered nurses	960,000	83,000	Employment expected to grow faster than average. Favorable opportunities, especially in some southern states and many inner-city locations. Nurses may find competition for higher paying jobs and for jobs in some urban areas with large nursing-training facilities.
Licensed practical nurses	460,000	53,000	Employment expected to grow much faster than average as population grows and health insurance plans expand. Job prospects are very good.
Nursing aides, orderlies, and attendants	1,000,000	83,000	Employment expected to grow faster than average due to increased demand for medical care. Most job openings will be in nursing homes, convalescent homes, and other long-term care facilities.

Occupation	Estimated employment 1976	Average annual openings 1976-85	Employment prospects
Therapy and rehabilitation occupations			
Occupational therapists	10,600	1,300	Employment expected to grow much faster than average due to public interest in rehabilitation of disabled persons and growth of established occupational therapy programs. Prospects should be favorable.
Occupational therapy assistants	8,900	1,200	Employment expected to grow much faster than average due to increased need for assistants in health care institutions. Opportunities should be very good especially for graduates of approved programs.
Physical therapists	25,000	2,100	Employment expected to grow faster than average because of increased public recognition of importance of rehabilitation. Very good employment opportunities, particularly in suburban and rural areas.
Physical therapist assistants and aides	12,500	1,100	Employment expected to grow faster than average due to expanding physical therapy services. Job opportunities for graduates of approved programs should be excellent.
Other health occupations			
Dispensing opticians	14,500	1,300	Employment expected to increase faster than average as population grows and demand for eyeglasses rises. Opportunities will be particularly favorable for persons with associate degrees in optiniary.

TRENDS IN HEALTH CARE DELIVERY AND CONSEQUENCES FOR THE HEALTH OCCUPATIONS

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In order to assist the Committee in fulfilling its ambitious mission of planning curricula for the health occupations for the 1990's, I would like to present some history: history of disease prevalence, history of provider-consumer relationships, history of the problems we have faced, with implications for the problems we will face. For, as I will argue, the context in which the health occupations will practice at the turn of the century, and the training needed for these occupations, is an outgrowth of a trend that began at the turn of the last century. Toward this end, let me make a series of observations.

The leading causes of death in 1900 in the United States were: infant diarrhea, pneumonia, and tuberculosis. The leading causes of death in the United States today are: coronary heart disease, cancer, and cardiovascular disease. Note the differences. The killers in 1900 were infectious diseases which are now readily treated. We like to credit medical breakthroughs with the change in disease prevalence. However, deaths from acute diseases were dropping long before the discovery of specific treatment for them. If one were to graph death rates from TB from 1850 to the present day, one would see a steady decline, a decline which began before the discovery of the TB bacillus in 1880, a decline which continued into the twentieth century and which therefore preceded the discovery of streptomycin--the treatment of choice for TB--in 1948. This classic picture, which could be replicated with countless other diseases, illustrates the impact of improved social conditions, and public health measures, rather

than specific medical breakthroughs.

As a consequence of the decline of acute infectious disease, an aging of the population has occurred. Not succumbing to infant or childhood death, today a white male can be expected to live to age 69; a white female to age 77. Life expectancy for blacks is markedly lower, it should be noted (some five years for each sex); a consequence of environmental factors.

By contrast, life expectancy at birth in 1900 was 47 for the white male, 49 for the white female. The aging of the population which we have observed during the period from 1900 to 1980 represents a trend which we can expect to continue into the 1990's. These figures carry clear implications for the delivery of service, the settings in which practice will occur, and the kinds of health personnel needed to care for an increasingly aged population.

Not only are the leading causes of death today the chronic diseases. They also represent the major problems of the living. Let me define what is meant by chronic diseases. Dr. Mayo, a member of the Commission on Chronic Illness, offered the following definition (in 1956):

> All impairments or deviations from normal which have one or more of the following characteristics: are permanent, leave residual disability, are caused by non-reversible pathological alteration, require special training of the patient for rehabilitation, may be expected to require a long period of supervision, observation, or care.

Some figures on chronic disease prevalence may be instructive. A recent National Health Survey found that 50% of the civilian population had one or more chronic condition. The rate was higher in the elderly, but diseases were not confined to this population. In another survey, six out of ten individuals reported a disability of one sort or another.

Moreover, multiple chronic diseases in the same individual are charac-

teristic--essential hypertension and heart problems, for example, or diabetes and blindness. Again it should be stressed that blacks have significantly higher rates of hypertension, and higher rates of multiple chronic diseases. Coupled with the trend toward an aging population, the frequency of chronic diseases can be expected to rise in the 1990's. Paradoxically, some of the "medical breakthroughs" of the last decade can be credited with this rise. Neonatal intensive care units in hospitals, which have been responsible for the survival of many low birth weight infants and other babies at risk for death during the first days of life, may also be responsible for increased chronic disease prevalence. These babies, which would have died prior to the ICU's, carry higher than normal risk of retardation, developmental delays, and other disabilities.

What are the implications of rising chronic disease prevalence? I would like to argue that these diseases and conditions have a series of characteristics which differentiate them socially from acute diseases, and which carry a series of behavioral consequences both for patients and for providers attempting to care for patients. Let me list some of these characteristics and then let us explore together the implications of these for planning training programs for entry level positions in the health occupations.

1. The ever-present possibility of a medical crisis exists with most chronic diseases. Indeed, the patient's life must be organized for crisis management; reading signs, accurately relaying these to health personnel, is not infrequently required. Moreover, the patient's environment must be reorganized to prevent crisis, for example--the dietary requirements needed to control diabetes, or the changes in the home environment recommended for asthmatic children. A high degree of family organization is required to prevent incipient medical crises.

2. Chronic diseases involve management of frequently complex regimens. These regimens can be minimal in their impact on daily life--as with hypertension under control--or maximal, involving a reorganization of time and space and general life style--as with a colostomy or cardiac patient. Adherence to the regimen, so crucial to effective disease control, will vary depending on aspects of the regimen and support and assistance both patient and family receive.

3. Treatment of chronic diseases focuses on symptom control, not cure. The knowledgeability of the patient to correctly read signs and monitor feeling status is necessary. The extent to which the patient and family are knowledgeable and can effectively participate in management is likely to influence outcome. The mechanism whereby symptom control frequently occurs is self-care: the performance of activities by patients rather than providers to benefit health. (The increased interest in recent years in self-care is no doubt related to the rise in chronic disease prevalence, as well as to cost containment.) In the treatment of certain diseases, diabetes, for example, self-care has long been charactertistic--patients injecting insulin; for others, the transfer of function from provider to consumer has been more recent and more controversial (self-infusion of hemophelia patients, for example). The current proliferation of self-help groups for patients with similar diseases reflects a self-care ideology, and has led one writer to recommend that "all health personnel should regard themselves as conduits through which...information flows from one inventive sick person to another."

4. Finally, chronic illness can involve prolonged social isolation. Avoidance behavior on the part of the normal population of those with handicaps has been empirically demonstrated, particularly where a visual stig-

mata is involved. Self-imposed withdrawal can also be characteristic. Home care programs for the chronically disabled frequently count the socially isolated among their clients and are in a unique position to use interpersonal skills to address this typical feature of chronic illness.

These four characteristics of chronic illness, by no means an exhaustive list, highlight a number of training needs which those planning for health occupations should address.

1. Treatment of the social component of illness must be a priority. Training programs should give at least equal weight to the social as to the biomedical or technical. As reviewed, the chronic illnesses which are likely to characterize the '90's are deeply intrusive into the lives of patients and their families requiring changes in life style, time organization, and self-care responsibilities. Moreover, empirical evidence points to the deleterious consequences for patients when social and psychological needs are not addressed. Traditionally trained physicians and nurses usually are not oriented to social and psychological concerns, but rather to the "curing" aspects of medicine. These diseases require "caring," rather than "curing," for control rather than recovery is to be expected. Caring is not the only function of psychologists and social workers, although it may well be that certain cases require their level of expertise. Lesser trained health workers can be taught to be sensitive listeners, and to be supportive to families attempting to care for an ill member.

Attention to the caring aspects of chronic disease management requires a set of skills which can be taught, including interviewing, non-judgmental listening, and verbal and non-verbal support techniques. Group modalities may be especially suited to the provision of psychological support, and training in group work could be incorporated into curricula.

As an aside, it is worth noting that in China the bulk of primary care is provided by what we would call mid-level practitioners, with tasks delegated to assistants not dissimilar to our entry level health workers. All health workers are responsible to the community, not the professional alone. This pattern is also characteristic of other countries where a shortage of physicians exists.

2. The self-care component required in chronic disease management requires patient education at levels hitherto unattempted in the United States. Transferring of selected functions from providers to consumers is the thrust, with backup and supervision by those in the health occupations. Non-professional personnel may be particularly suited to training for these new roles, for structurally many are similar to patients in background characteristics, and therefore need not bring the assymetry characteristic of the doctor-patient relationship into their interactions with patients. These social characteristics may be beneficial for a mutual participation model of practice. This model, I would argue, is best suited to chronic disease management in contrast to an active provider and passive consumer, which is better suited to treatment of acute diseases. (Of course, activity of the provider and passivity of the consumer may be called for in medically acute phases of chronic disease.)

3. The health occupations of the '90's can anticipate an increase in bureaucratically based practice, with pre-paid group, hospital, hospice, extended care facilities and other institutional programs increasingly characteristic. Home health care of the aged and handicapped will rise only to the extent that governmental programs and other third party payers recognize and reimburse practice in other than traditional locales, and only to the extent that families are supported financially and socially, thereby enabling the chronically ill to be maintained in their homes.

Given institutionally based practice, training for team work and organizational exigencies may be in order. A body of theory exists which can be of immense help to practitioners working in organizations and should be incorporated into curricula.

Within organizational contexts, entry level workers will face the resistance of both mid-level practitioners and professionals to the delegation of tasks. These can be viewed as threats to professional dominance, or these struggles can be viewed as a response to other issues. With the use in technology, changes in the division of labor, proliferation of lesser trained health workers characteristic of the last 20-30 years--the result has been a gradual erosion of the holistic aspects of medicine and nursing. Health professionals are isolated in more specialized and segregated spheres of activity, resulting in fragmentation for the patient and the entire health care system.

A final word on technology--the imperative of modern medicine. We have come a long way from the doctor with his "little black bag," making house calls, at the bedside of the dying patient--the home care of the past. Now that patient is likely to die in a hospital, surrounded by machines, who do the work of failing body organs. We should not idealize the past--the doctor with his bag--for the bag was empty of drugs crucial to health. But nor should we be uncritical of the present--especially drugs and technology. As the recent evidence on coronary care units suggests, technological "advances" are of questionable benefit to the patient, although they clearly benefit the industries which produce this technology. To the extent that entry level workers are segregated into roles as operators of machines whose monetary costs and iatrogenic consequences outweigh their benefits to health, these workers will be in vulnerable positions as

the scrutiny of medical technology increases.

In sum I have made a series of observations which have impact for how we treat and train in the 1990's:

- our population is aging; the kind of medical care required of this population contrasts sharply with that of the past;
- chronic diseases are increasingly characteristic and these diseases have social sequalae which need to be addressed;
- looking backward, public health measures and environmental changes have been responsible for major improvements in the health of the population to date; the extent to which we address our environment will determine where we stand in relation to other countries on health indicators;
- drugs and technology--so characteristic of modern practice--used indiscriminately are associated with a rise in prevalence of certain diseases--technology and industrial interests cannot decide. Rather we must decide how to selectively use this technology.

In summary, the '90's represent a challenge to those planning for the training of health occupations. New directions in training, and new roles for consumers and providers alike are called for.

THE DETERMINATION OF HEALTH CAREERS IN THE FUTURE

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Introduction

Traditionally, the dilemma facing the hospital employment office has been difficulty in the recruitment, selection and subsequent employment of the skilled and professional hospital worker. The shortage of nurses, physical therapists, physicians and laboratory technologists are well known and often discussed. Indeed, the lack of personnel in these and similar areas have plagued hospitals since the end of the depression in the early thirties. There have been as many opinions as to the genesis of the problem as there have been discussions. Solutions, however, have continued to elude us.

Since the end of World War II, the number of hospital beds in this country has actually decreased by approximately 2%. Ironically, the number of full time personnel employed by these same hospitals has increased by more than 400%. The number of dollars expended for salaries for the latter, have increased over 3300% for the same period of time.

Many factors have contributed to these seemingly contradictory factors. The complexity of medical care and advances in the state of the art have significantly increased the number of personnel dollars required for each unit of patient care. In addition, during the past 30 years, there has been a shift away from long term custodial care to short term acute care. Acute care being noticeably more labor intensified than its long term counterpart.

The impact of advances in technology have been dramatic. At the end of World War II, the ratio of hospital employees to beds in the acute general hospital averaged somewhere between 1-1/2 to 2 patients per hospital bed. By the end of the seventies, the average ranged to almost 3 employees per bed, with some institutions having as many as 6 employees to a bed. Similarly, as the need for additional employees increased, the need for greater expertise in existing job categories and the demands on these jobs also increased. Thirty years ago, the duties of a nurse's aide required only the most rudimentary elements of patient care. Now, the nurse's aide is responsible for many of the activities previously performed by the registered or practical nurse. Similar changes have taken place in every level of the hospital's organizational and personnel structure. Indeed, to compare any job with its counterpart of thirty years prior would be tantamount to comparing two entirely different jobs.

In addition, new jobs are constantly emerging. Job titles that were non-existent following World War II are part of the everyday language of the lay public as well as the health professional. "Cardio-pulmonary Technician"; "Nuclear Technician"; "Respiratory Therapist"; "Critical Care Nurse"; "Physician's Assistant"; "Nurse Practitioner"; all of these and scores of others are part of the personnel title glossary of the seventies. They were either virtually unknown or non-existent in the forties. To add to this already complicated structure of new jobs and redefinition of old ones, there emerged during the last thirty years, a new industry with a new conceptual base--A HEALTH INDUSTRY.

The previously defined hospital industry is but a component in the larger matrix of the overall health delivery industry. Suddenly, for the first time there emerged new concepts in health care--"Home Care"; "Free Standing Ambulatory Surgical Facilities"; "Health Related Facilities"; and many others designed primarily for the treatment and care of the sick and elderly. Along with these, there began to develop a mass of regulatory agencies. Many of these were governmentally funded and encouraged (i.e. Health Systems Agencies, Professional Standards Review Organizations) and a complex system of regulatory agencies at the federal, state and local level evolved.

Finally, this voracious newcomer to the industrial and service world stimulated the development and growth of a myriad of support industries. The drug industry had a resurgence of growth--free standing laboratories, medical supply manufacturers, builders, real estate developers, research and consulting organizations delving into such diverse areas as medicine, administrative and management techniques, purchasing services, computer technology, etc. All of these developed and added to the growth of an ever increasing work force. Even the labor union, recognizing the potential of this monolithic structure, developed systems and programs for this newly emergent world of the health professional, the health paraprofessional and the other members of the health team, however they be defined.

There evolved therefore, a comprehensive industry that is perhaps the second or third largest in the nation if not in the world. It has been estimated that that one out of every four or five employees is a

member of this health industry. The 3.2 million employees representing the hospital component of the health industry, therefore, reflect but the tip of the iceberg. The 400% increase in the number of hospital personnel since 1947, pales by comparison when one recognizes the astronomical growth of the entire industry.

Yet, the development of jobs, skills, employees, systems have been accomplished without design, control or coordination. This disregard for coordinated growth has resulted in the most expensive of systems and the most unfair. Its size, its speed of development, its complexity and its dependency on unrelated and uncontrolled factors threaten its very existence.

History of Health Careers

The increase in hospital and health related jobs has brought with it a corresponding increase in health job and career vacancies. The vacancies, while frequently regionally oriented, are no longer restricted to the highly skilled or professional jobs but ironically enough outrun the entire spectrum of health careers. The demand for skilled nurse's aides is frequently almost as great as the previous defined need for registered and practical nurses.

Salaries for health personnel at all levels are now on par with those in industry. Health employment has become an acceptable and a respectable manner of earning a living. Yet health organizations have frequently experienced great difficulty in finding suitable candidates to fill specific skilled needs. It would appear that the increased job opportunity coupled with increased salary would do much to attract the

unemployed, particularly in the nation's ghetto areas. However, this is frequently not the case. Job opportunities remain unchallenged and unemployment lines continue to grow.

Potential Unchallenged

One of the ironies of the health industry is the fact that while vacancies exist at all levels, there appear to be insurmountable barriers between levels, discouraging and thus preventing internal movement and promotion from within. This then limits the number of entry level jobs available. On the surface there appears to be a continuum of preparation from the lowest skilled individual in the hospital organization to the highest. Nevertheless, the attainment of the next level of experience is often blocked by traditional, legal, academic, social or economic rationalization. The reasons preventing a nurse's aide from becoming a registered nurse appear logical and rational on the surface but fail to hold up under close scrutiny. As an example the difference in education between a nurse's aide and a practical nurse is one year in duration. The difference between a practical nurse and a registered nurse is similarly one year in duration. The difference therefore between a nurse's aide and a registered nurse is approximately two years of education. Nevertheless, the rarest of practical nurses ever achieves the registered nurse status and rarer still is the nurse's aide achieving either the practical or registered nurse status.

With the exception of certain isolated programs, the only way either the licensed practical nurse or the nurse's aide can achieve the next

step is to temporarily drop out of the labor market and existing employment (which is frequently an impossibility for the low income employee) and to enter an academic program that offers no recognition for past experience.

The problem appears to lie within the philosophy of the organization itself. For years, hospital directors and personnel administrators have encouraged the hiring of individuals for positions rather than for careers. This is true not only in the nursing areas, but in almost all departments of hospital organization. It is time that we recognize the similarity in vertical position structure, and indeed in horizontal position structure. It is time that we capitalize on the experience of our employees and permit education and promotion from within by recognition of this past experience. Then, and only then, will we be able to recruit at all job levels. The ghetto youth, unlike his parent, is no longer willing to accept the unskilled or the low skilled job if it offers no potential. The job of nurse's aide will be applied for by capable personnel only if it offers the opportunity of advancement to nurse or nurse administrator. The job of porter will remain unfilled by capable individuals unless the job of housekeeper or possibly administrator lies within the horizon of reality and hope. This then must become the philosophy of the health community and those responsible for it.

History of Health Training

In the past decades, various attempts have been made to cope with problems listed above. At best, these programs have met with only

moderate success. The lack of success can be measured both by the continued lack of mobility between jobs and the continued existence of vacancies in many skilled and semi-skilled areas. Perhaps the most frustrating fact is that while the number of individuals participating in these programs is significant, their success in locating improved employment upon graduation is minimal at best. The obstacles encountered by the organizations attempting these programs and problems inherent in the programs themselves will be dealt with later in this study. The nature of these problems and their definition and solution are crucial to the success of any training or upgrading program that might be introduced.

What is required is a comprehensive restructuring of the entire health career concept. Initially, health related jobs should be inventoried and analyzed in order to determine job content. Once having accomplished this, they should be reorganized in clusters that reflect similarity in content and potential for development.

The value of life experience should be recognized. What is required addition to the analysis of a job, is the evaluation of life experience in health career areas. Systems must be structured that will allow for measuring and weighing the impact on life experience for credit toward future career goals.

Finally, all these must be incorporated into a training program that is both academically and clinically oriented. The program should be structured to meet the goal of the individual as well as the job. Traditionally, the concept of apprenticeship training is that mode.

Growth Has Been High and Will Continue - Particularly at Lower Levels

While the growth of health care employment is likely to continue for the foreseable future, the patterns of this growth will probably show important divergence from what has gone before.

In 1977 health employment was estimated at 6.3 million, a 50 percent increase in the 1970-77 period which followed a 65 percent increase over the 1960-70 decade. However, examination of the proportionate breakdown of employment growth in this same decade reveals that the number of allied health workers--increased by only 30 percent. The health occupational profile clearly continues to show relatively greater expansion at the lower than the upper levels.

Projections through 1990 indicate that levels below the baccalaureate will continue to grow substantially faster than those above. Estimates made in the late 1970's predicted that by 1990 the number of LPNs would approach 820,000, more than double the 1970 number, and the number of RNs would also double to between 1.43 and 1.54 million. While not all analysts agree with this projection, few disagree that these general trends will continue.[1] Furthermore, passage of national health insurance is also expected to strengthen the growth trend in health occupations.[2]

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[1] Supply of Health Manpower: 1970 Profiles and Projections to 1990, U.S. Department of Health, Education & Welfare, 1978), pp. 12,21,129-130.

[2] Gustav Schachter and Harold Goldstein, The Manpower Implications of National Health Insurance, (Boston: Center for Manpower Studies, Northeastern University, Paper presented at the New Hampshire Careers Council Conference, August 1977.)

Growth of Hospital-Based Employment Will Continue

While the total number of hospitals decreased between 1969 and 1973, hospital-based employment continued to grow. In 1974, there were on the average 275 employees per 100 patients in non-federal hospitals of all kinds, and 336 per 100 patients in acute care or short-stay hospitals ranging from a low of 295 in the west north central region (Minnesota, Iowa, Missouri, North and South Dakota, Nebraska and Kansas), to a high of 394 in New England. Larger hospital size and increasing specialization among hospitals help explain this trend. Thus, despite mounting pressures to contain or reduce total beds, overall hospital employment will continue to grow. This employment growth will not be uniform, however; in particular, jobs in the older and smaller institutions will be vulnerable to cutback, as will those under local government ownership, as in New York City, Philadelphia, and some other cities.

Non-Hospital Institutions Will Require More Employees

As pressure mounts to reduce hospital costs, the effort will intensify to develop and use other institutions such as nursing homes, skilled nursing facilities, recuperative centers, and residential facilities. In many places, excess hospital beds and pavilions will be converted into facilities providing care which is less directly medical-related, less labor-intensive, and more useful for patients past the acute phase of care, who cannot function at home.

Ambulatory Care Will Grow In Importance

The bias in the present reimbursement structure which favors in-patient care, downgrades ambulatory care, and sets reimbursement rates

below real costs, will come under increasing pressure, tilting the balance more favorably toward ambulatory care. Many physicians and hospital administrators will support this tendency, and one consequence will be the enlargement of employment prospects in ambulatory care. New entrants will fill some of these openings, but there will also be a need to provide for restraining and transfer of incumbent hospital workers into ambulatory and community-based settings. The training appropriate for these settings will be less focused on institutional needs, more generic, and will stress skills appropriate to functioning in less structured situations. These positions will also demand more autonomy and more direct interaction with patients, around a different, and somewhat broader, (but less specialized), set of needs.

Home Health Care Will Attract Increasing Attention

Home health care will grow in response to the need for new patterns of care and a better approach to health maintenance. It will be necessary to learn from, and not repeat the recent experience with deinstitutionalization of mental patients. This movement, (a policy of the past decade), has produced dramatic evidence of the pressing social problems created when alternatives to the hospital are not adequately planned and provided, and--most important--when trained people are not available to provide the needed care, whether at home or in special residences. The cost pressures already cited will increase the resistance to extended hospital stays for people who can function at home and in the community. Pressures will also rise from key constituency groups to enable older people, the most rapidly growing group in the population, to find the

help and support they need at home; and the shortage of nursing home beds, the rise in nursing home costs, and the poor reputation of most nursing homes will reinforce these pressures.

It is evident that the demand for the health professionals and paraprofessionals will continue to grow during the next two decades. The task before us therefore is to develop coordinated and comprehensive educational programs that will prepare future generations for these careers.

The success of these programs will depend on our ability to both identify and solve the problems that have defied solution in the past and still continue to plague us.

Hierarchic Relationships Still Dominate in Many Health Care Settings

Occupational rigidity, reinforced by medical and nurse practice acts and the protective zeal of the organized professions, continues to Balkanize the health care field and to organize care around the occupational prerogatives and traditions rather than around careful analysis of the needs of the institution and those who use it. Administrators tend to avoid a systemic approach to staffing; as one puts it, they hire "for positions rather than for careers". But administrators are now also recognizing that hierarchy is the enemy of cost effectiveness, as well as a barrier to recruitment and retention of motivated and qualified workers. In concert with other factors cited here, this recognition strengthens the plausibility and appeal of new approaches to training, upgrading, and deployment.

Credentials Dominate the Path to Professional Roles

Health care is no doubt the most highly credential dominated sector of employment in the United States. This applies to entry into the technical or professional levels from outside, as well as internal access to upper level jobs from below. Using the physician as a model, each successive group has sought to carve out its own scope of work, to control criteria of entry, and to reinforce their control through licensure requirements. A host of studies has documented the growth and effects of this tendency.[3]

Recently, however, excessive reliance on credentials and the proliferation of licensure have encountered resistance, reinforced by the concommitant tendencies now shaping the health care system. Licensing is increasingly viewed as wedded to the past and not responsive to new needs and developments. It is negatively perceived: as provider oriented and protective at the expense of patients and the public, as an unreliable protector of quality stifling new approaches to education and training, and as preserving the results of earlier patterns of discrimination and exclusion.

In order to meet the growing and complex task of the preparing of health professionals in the future, a new philosophy and a new prospective of the professional and paraprofessional must be constructed:

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[3] An Interim Staff Report on Policy and Legal Implications of Health Occupational Licensure, Project Iatrogenesis, (Sacramento, California: Department of Consumer Affairs, 1978)

1. New job definitions must be created that will both recognize the ladder--lattice concept in job growth and career building.

2. A central storehouse for data must be established to gather and disseminate health information and statistics in order to accurately predict both health needs and health career potential for the future.

3. The entire question of licensure must be re-examined in order to divest the system of archaic forms that have been preserved as protection for the vested interests.

4. Future trends of health delivery systems should be explored in order to properly identify health careers in the future.

5. Educational systems should be redesigned so as to recognize the existing work force within the health industry. The life and work experience of the individual within the health field should be taken into account in the credentialing process in order to make use of these experiences and at the same time create a mobile and highly motivated work force.

6. Finally, the provider and the consumer, the educator, and the labor union, together with government representatives, should collectively join in the design of systems that will adequately prepare for health needs of the future.

CURRENT STATUS AND FUTURE IMPLICATIONS OF COMPUTER UTILIZATION IN HEALTH DELIVERY SYSTEMS

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Introduction and History

Since its introduction into the Health Care Delivery System in the 1940's, the usage of Computers has literally exploded in the intervening three decades. In order to better understand the impact of this new technology it is of benefit to review the history of computers in medicine. Soon after the development and production of the first commercial computers, the health care industry began to assimilate the output of the manufacturers.

Computer implementations and usage began in hospitals and large clinics where the concentration of health care delivery needs were the greatest. Initial computer purchase prices were very high as were the operating costs. Reliability, as regards to uptime of early computers, was a major weakness which prevented any extensive usage for real time, on line, application. As a result, computers were delegated to batch process applications, and most notably to business office, accounting, and personnel applications. As reliability increased, computer capabilities were extended to many other areas of usage in the hospital.

Computers began to find their way into hospitals (concentrated patient) because of one or both of the following major attributes.

- The desire of the user to invest capital dollars in order to replace a certain quantity of labor. The general premise being that the capital investment for machinery declines over time as improving technology reduces its cost, while the quantity of

labor replaced is constantly increasing because of a continuing reduction in productivity plus inflation over time.

- The discovery of a task or series of tasks which the user was desirous of performing and which was totally not feasible by manual methods.

As a consequence, as computer technology improves and the computer in turn is ever more reliable and able to perform more and more complex tasks at less cost, more computers will be utilized at the expense of less labor utilization.

However, at this time in our review of computer usage history, we should look at what computers are able to perform in the health care environment. The major areas of application to date are:

- Record transactions of the care process. This capability is one of the major attributes of the computer and examples include electronic medical record keeping and business office activities.
- Generate and update reports and files. Patient care plans, seven-day laboratory results, current census, and master patient files are examples of reports and files.
- Automate repetitive tasks. Patient bills, medical records extracts are some of the uses of this attribute.
- Communicate and distribute orders for services and materials. Doctor's laboratory orders, pharmacy orders and central services requisitions fall into this category.
- Assure specific tasks or services have been provided. Overdue medication lists, open laboratory and x-ray orders are examples of this application.
- Support clinical and facility management decisions. This is

probably the most important application of the computer and examples are usage on intensive care monitoring systems, CAT scanners, and short- and long-range facility planning applications.

It is most interesting to note that all of the above examples of computer application are most applicable to hospitals or large clinics (physician practices) where the concentration as well as need for patient care data is the highest. Also noteworthy is that the applications listed support the higher skilled occupations and/or replace or reduce the need for the lower or clerical skilled levels. Another observation is that the computer does not materially change the "hands on" portion of the health care provider occupations.

Present Status of Computer Usage

In some part due to the investment by the Federal Government as well as that of private capital, much of the technology, or at least the technical feasibility, has been proven to exist above, at, and below the hospital level (when considering a hierarchy from regional health centers thru hospitals to home self-care). The main issues preventing wide-scale applications of computer information systems below the hospital or non-central setting are "costs" and "applicability."

Some of the applications that have been proven technically feasible today are:

- Most inpatient support applications. Previous functions listing contributions by the computer are in this area. Specific applications tested and either fully or partially operational are hospital information systems, laboratory, pharmacy and other ancillary sub-systems, patient monitoring systems, clinical data

banks, and medical consultation.

- Many outpatient support applications. This area has the least computer application and may hold the most promise for non-professionals for the future. However, physician aide systems have been tested. Examples are automated ambulatory medical record systems, treatment protocols, physician extender protocols (of special interest since it holds the promist of better utilizing the non-professional assisting the physician). Widely implemented programs are computerized bill and claims processing. Another interesting application features computer assisted telecommunications where the computer integrates an information bank and communicates this information to the point of use.

A review of implemented and/or tested systems indicates that the interaction of the computer and non-professional is relatively little for other than clerical tasks such as billing, nursing clerks, etc.

Major Factors Impacting or Impacted Upon by Computers

The growth of computer usage in the health care delivery area has been so dramatic that many fail to realize a major stumbling block to future expansion is still dependent upon acceptance by the user. Traditionally the higher the education and occupational level of the user, the less the level of acceptance. A major exception is the acceptance of computerized information systems by hospital nursing staffs including nurses, ward secretaries, and nursing aides.

Another factor that may have a significant impact on the non-professional of the future is the characteristics whereby computer systems have a tendency to upgrade the skill and ability levels of the traditional occupation or skill levels. It is believed that because of the massive data (information) banks in the computer, the skill level or capability

of the technician is enhanced where by the technician drops the lower portion (less skill level) of his job requirements which becomes a new portion (higher skill level) of the job requirement of the individual below him in the health delivery hierarchy.

The health care delivery system has been characterized by various needs during the past several decades. The "assessability" of health care was the first and foremost obstacle. Emphasis then passed to the "quality" assessment phase of the delivery system. For much of the past decade "costs" have held center stage. From the previous discussion on capital versus labor costs it is possible to interpolate that if the present level of technological improvement persists in the computer field, the wholesale implementation of the systems in both the in- and outpatient areas will become a reality.

Another force impacting on computer usage of the future is the Federal government. The National Center for Health Services Research has supported research of computers for both in- and outpatient systems over the past decade. This will probably continue into the future. In addition, the Technology Assessment Division of the Executive Branch of the Federal Government has shown increasing interest in supporting the initial capital requirements for computer systems proliferations in the health care industry.

Computer Interfaces

One of the problems of using a computer for any application deals with interfacing the user and the computer. This is such an important aspect of computer usage that it is worthwhile dealing separately with this problem.

First generation computers, in addition to being slow, costly, and cumbersome, were also difficult to interface with the user. Imputs usually came about thru keypunching data on to cards or tapes and machine reading them into the computer. Output was usually digital data printed on paper.

The user was unable to communicate readily with the computer. An inquiry, for instance, might require twenty-four to forty-eight hours before an answer was available.

Present interfaces have been substantially improved with the leading technology edge supported by on-line and real time inquiry of the computer by keyboard and cathode ray tube light pen. Output centers around digital printouts or visual displays on cathode ray tubes. Imputs are further supplemented by optical readers, mark sense readers, and, of course, direct input into the computer. Good examples of direct interfaces are the clinical support systems such as monitors or clinical laboratory instruments.

Future user interface will take a quantum leap forward with voice input and output supplemented by visual displays as required for clarification or checking. However, voice interfaces will probably be limited for some time to unique and limited vocabularies utilized by a particular system.

Future Implications on Non-Professional Health Care Workers

While it is true we can only guess at the impact of computer technology on the non-professional health worker of the future, there are a number of reasonable thoughts we might entertain based upon our knowledge of computer systems and the impact they have made to date. Some ideas we might consider regarding impact on the next two decades are:

- The non-professional health care curriculum appears to emphasize health work (hands on) and not data base control. Certainly this need will continue to be required for the future and perhaps even more than for the present.
- The non-professionals' role may not change substantially. The function that computers will perform will not impact or might even eliminate part of the present job. Manual information pro-

cessing needs as an example might be reduced.

- The non-professionals' role may be up-graded and will take over more of the occupation or function it is supporting. An example might be using practical nurses for home calls since microprocessors may permit the practitioner to take and develop urine and complex blood results at the home. Telecommunication with a physician and/or on-line computer may permit the practical nurse to make simple diagnosis and perhaps initiate therapy. It appears that major impact will probably be in the outpatient areas for health care delivery since the hospital is already relatively well structured and set for the future. However, very few hospitals have complex computer systems at this time.
- In the hospital setting, the growth and proliferation of hospital or medical information systems will continue to reduce or eliminate the routine, clerical, and mundane information handling roles.
- The ever-increasing data and information base along with the continued growth of information required by governmental bodies may create other job possibilities for the non-professional.
- The computer industry in health care will specifically add new non-professional jobs. Computer operators and hardware technicians are two examples of positions for which there will be more demand. For example, any real time, on-line system will require at least five FTE computer operators.
- The use of computers to help teach the health care curriculum of the future must be considered.
- The computer industry is in such an explosive state of techno-

logical advancement that it will be necessary to continually assess and reassess the impact on the non-professional health worker.

- All computers must be programmed before they can be used in the health care field or any industry. Analysis should be performed to determine if non-professional health workers might find assisting roles in the programming community.

The curriculum of the future needs:

- To teach a simple concept of computers so the student is not in awe of computers and instead recognizes it as a powerful and useful tool.
- To provide some hands on application so the student actually sees the computer used as a servant to the user.

Reference:

"Computer Application in Health Care," by Medical Information System Cluster, Division of Extramural Reserach of NCHSR, 1979.

Introduction to Alternative Futures for Auxiliary Health Personnel

Sigmund Tobias

Dr. Clement Bezold's presentation dealt mainly with four different scenarios for the future of the health delivery system. The actual presentation amplified on the characteristics of two of the scenarios: the "continued growth," and the "transformational society" scenario. These introductory comments serve to set the stage for the major characteristics of the different scenarios to be found in the table appended to this introduction.

Dr. Bezold indicated that the four scenarios had come from different views of societal futures developed by Professor James Dator of the University of Hawaii based on a survey of the literature regarding the future. Four similar scenarios were developed by the Stanford Research Institute based on a factor analysis of a large data base. It was felt that the close agreement between the scenarios independently developed by Professor Dator and the Stanford Research Institute provided concurrent validity for the four scenarios. The implications of the scenarios for the health care system were developed jointly by the Institute for Alternative Futures, of which Dr. Bezold is the director, and by the Policy Research Institute of Baltimore, Maryland, directed by Dr. Peter Goldschmidt.

Dr. Bezold indicated that the four scenarios were projections as to what society might be like in the year 2025. The first scenario, Continued Growth, expected that society would continue to grow pretty much the way it has until now. This would involve looking towards increased use of technology to solve existing environmental and resource

problems. From this point of view, the energy crisis is viewed as a temporary aberration in the curve of a continually expanding economy and society. The characteristics of the continued growth scenario can be found on the succeeding tables.

The second scenario, Collapse, envisions a total collapse of societal functions as we know them. This scenario is based on the occurrence of a disaster whether as a result of environmental pollution, collapse of social institutions, or other causes. It this scenario a return to a primitive social organization is envisioned. Society, as seen from this view of the future would have few functioning institutions, and most activity would be at the individual and local level.

The third scenario, the Conserver Society, is based on the premise that the natural resources fueling continued growth may well be exhausted without careful planning. This scenario envisions a variety of activities dictated by the need to conserve the scarce resources available. Strong leadership, perhaps autocratic, is expected to implement the elements of a conserver society from this view of the future. Emphasis would be on work characterized by minimal technological involvement, and use of high "labor intensive" activities.

The fourth scenario elaborated was of the Transformation Society. This scenario envisions a basic change in values and attitudes of our society featured by reduced reliance on technology, and a search for alternatives to "high technology." These alternatives might involve turning to eastern philosophies and values, increased assumption of individual responsibility for one's life, behavior, and well being. The other characteristics of the society are enumerated on the attached materials.

Dr. Bezold's presentation focused most intensively on the "Continued Growth" and "Transformational Society." It should be noted that the conception of alternative scenarios does not suggest that society will necessarily evolve along the lines of any one of these four scenarios. That is, there isn't any one most likely future. Instead, analyses of society suggest that development could occur along these four different paths, perhaps simultaneously. Unless careful planning is involved it may very well be possible that society will evolve to a system characterized by the worst elements of the four scenarios. Reasonable advance planning is required in order to ensure a system which would combine the best elements of these scenarios.

HEALTH CAREERS IN EDUCATION IN CALIFORNIA SECONDARY EDUCATION, ADULT EDUCATION, REGIONAL OCCUPATIONAL CENTERS AND REGIONAL OCCUPATIONAL PROGRAMS--STATUS AND PROJECTIONS

Beverly Campbell
Department of Education
California

Health careers education in California is in a period of change for programs offered through secondary education, adult education, regional occupational centers and regional occupational programs. To date, little effort has been made to encourage uniformity in course offerings in health careers education. Perhaps since the first program, nurse assistant, was offered in 1956, the fragmentation can be attributed to the infancy of health careers education at the secondary level as a recognized vocational occupation when compared to Agricultural Education, Industrial Education, Home Economics, Business and Distributive Education occupational training.

Current Status

Health careers enrollment in 1956 was 282 students in one occupational area, increasing to a current enrollment of over 35,000 students in 23 different programs. Of the 23 programs offered, three occupations are licensed by licensing boards under the California Department of Consumer Affairs, i.e., Registered Dental Assistant, Psychiatric Technician and Licensed Vocational Nurse, two of the 23 occupations are certified by the California Department of Health Services, i.e., Home Health Aide and Nurse Assistant (long-term care). Occupations credentialed by other than a government agency include Emergency Medical Technician, Occupational Therapy Assistant and Medical Assistant. The 15 remaining occupations are currently in the unlicensed category.

Occupations with licensing/certificating criteria are more uniform in title, hours, and content of program than programs that need not meet this criteria. The latter programs have an extreme variance in course title, hours, and content. For example, Dental Assistant (non-registered) is offered from 108 hours to 1,250 hours, Medical Lab Assistant from 75 hours to 540 hours and Nurse Assistant from 50 hours to 880 hours. It is difficult to identify skills that are accomplished with any consistency in programs with similar titles when the difference in hours is so extreme. The title of programs range from the more specific as mentioned previously, to the non-specific such as medical careers, medical occupations, allied health, health careers and health, other.

Because of the wide geographic distribution of students and teachers in California, it was most difficult for teachers in suburban and rural areas to have a chance to talk with each other to realize there were such extreme program differences. A vehicle was provided for this most essential sharing of information through an annual statewide inservice workshop, three regional workshops, quarterly bulletins from my office and a newly formed association, California Association of Health Career Educators (CAHCE). The association now has over 225 members from all health career disciplines and all agencies offering educational programs. The mailing list for bulletins is well over 1,500 including vocational directors and coordinators.

New Curriculum Guides - Cluster Concept

After the concerns were identified, the need for curriculum guides seemed to be the number one priority. In order to provide for student mobility and career ladder opportunities, it was necessary to establish guidelines for course approval, new program implementation, program/course title uniformity and minimum and maximum skills to be accomplished for

successful completion of a program/course.

An advisory committee met and divided the programs offered through secondary education, adult education and regional occupational centers/ programs into four clusters. The clusters include: Nursing Occupations, Dental Auxiliary Occupations, Hospital Health Service Occupations and Medical Assistant Occupations. The first three clusters have been completed and inserviced at ten locations around the state in six-hour seminars.

The curricula each have a core common to the occupations in the cluster. After the completion of the core, the student may "spin-out" into the occupation that best fits the desires and abilities of the student. If time permits and the student has the ability and interest, more than one course within the cluster may be completed allowing for additional employment opportunities.

The Nursing Occupations Curriculum guide includes the core plus competency teaching guides and training plans for Nurse Assistant Acute, Nurse Assistant long-term care, and Home Health Aide. Plans include the development of Psychiatric Technician Aide, Vocational Nurse and Psychiatric Technician components.

The Dental Auxiliary Occupations curriculum guide includes options for Dental Receptionist, Dental Chairside Assistant and Dental Lab Assistant. Registered Dental Assistant and Dental Lab Technician components are to be developed for this guide.

Hospital Health Services includes a two-part core curriculum the first part (Core I) is to be completed prior to assignment to the training station with the second part (Core II) occuring concurrently with the on-site training. The career options in Hospital Health Service occupations are

divided into four categories: 1) Diagnostic Services, 2) Therapeutic Services, 3) Hospital Environment Services, and 4) Institutional Services. All of the occupations in each of the four categories are entry-level. Some occupations have a career ladder, i.e., Lab Aide to Lab Technician, while others do not, i.e., Medical Records Clerk. Sample training plans are provided in the curriculum guide for Lab Assistant, Dietary Assistant, EEG Technician/Assistant, Pulmonary Function Assistant, Radiology Assistant, Radiology Receptionist, Radiology Dark Room Attendant, Medical Records Assistant, Central Service Assistant, Physical Therapy Aide, and Pharmacy Assistant. Additional training plans are to be developed until all of the occupations in the guide are provided for.

Medical Assistant Occupations provides three options following completion of the core. The options include Medical Receptionist, Clinical Assistant, and Medical Lab Assistant. All of the occupations are at level I in accordance with the American Medical Assistant Association guidelines for certified Medical Assistant.

Inservice workshops in ten locations for six hours each provided the initial method for dissemination. Master trainers will disseminate additional guides to those that were not able to attend the first round of workshops in either a one-to-one or small group session as requested by local education agencies.

It is anticipated that all of the programs will be utilizing the curriculum guides by the 1982/1983 school year. To date, the materials have been most enthusiastically received by instructors and administrators that have had the opportunity to attend inservice sessions.

Future Planning/Anticipated Outcomes

Projects planned for with anticipated outcomes by 1990 include:

- Viable Health Careers Programs Study - A study to support the concept that students who do complete entry-level health careers training programs through a secondary/adult/ROC/ROP agency are 1) more inclined to continue their education and also those that do continue are 2) more aware of the realities of the health care field which the student has selected to pursue.

  --Anticipated Outcome: If this concept is validated by the study, the data will 1) provide recognition of quality vocational education health careers training programs at the secondary level, and 2) provide realistic career ladder opportunities for all enrolling students without repetitive competency training.

- Academic Infusion - 1) Modules prepared for inclusion in math, English and science classes as part of the curriculum that will prepare students for the health careers clusters; 2) Appropriate math, English and science credit given for the health careers course/program.

  --Anticipated Outcome: 1) Assist academicians to provide "real-life" situations as part of the course of study and also to provide more information about health careers, and 2) increase enrollment opportunities for students as credit can be applied toward academic graduation requirements.

- Pre-service Module - Prepare a module to be included in the teacher training program (Phase I and Phase II) for prospective health careers teachers. The module will include a curriculum guide, suggested resources, supplies and equipment, on-going classroom visits

and teaching strategies.

--Anticipated Outcome: Health careers teachers better prepared to meet the teaching assignment specifically in the health career to be taught.

- Special Needs - Identify specific tasks within the health careers to meet the individual abilities of the handicapped students desiring to enroll in a Vocational Education Health Careers program.

  --Anticipated Outcome: 1) Encourage successful completion of the health careers program by the handicapped student, and 2) provide increased employment opportunities for the handicapped student.

- Guidance and Counseling - Prepare modules on health careers training for guidance counselors including on-site visits to health careers programs and training/employment sites.

  --Anticipated Outcome: 1) Realistic information for students prior to enrollment into a health careers program, and 2) increased enrollment of males as counselors become familiar with the many career options in the health field.

- Articulation - Working with the Boards, other licensing agencies and all levels of training agencies identifying specific criteria for recognition of previous training and experience.

  --Anticipated Outcome: An articulated career ladder in health careers education to allow students to complete career goals in the minimum amount of time without unnecessary replication of competencies previously achieved.

- Technical Assistance - Provide intensive training to a team of "on-call" consultants from local education agencies to extend the vocational education staff services to health careers teachers

throughout the State. The current Vocational Education Unit provides a half-time consultant for health careers education.

--Anticipated Outcome: 1) Specific teacher assistance, as requested, to meet needs that may not be available through local education agencies, and 2) provide uniform programs throughout the State.

- Resource Center - A resource center in the Vocational Education Unit that has been relatively non-functional for health careers educators is currently being revised. A team of teachers is reviewing materials, particularly audio/visual, for inclusion in the resource center.

  --Anticipated Outcome: Materials made available to teachers on a lending library basis that, due to tremendous cuts in educational funding, will not otherwise be available.

It is essential for the State Department of Education, Vocational Education Unit, to continue to provide assistance to teachers in a field of continuous growth and change. In many instances, change is so rapid that within a three-year period of teaching, job skills can become obsolete. The teaching role in health careers is so extensive, there is frequently no time available for research and planning. If this can continue to be accomplished for the health careers educators, we can continue to provide a method for keeping programs current, uniform, and meaningful.

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THE CHALLENGE OF CHANGE

Willard Daggett
State Education Department

As a business educator, it is impossible for me to discuss the future of your curriculum area. However, based upon my experiences in futuring the business curriculum, there are some signals that I believe you should be aware of as you plot your new road map for health occupations education.

Your Challenges

You are beginning one of the most important, challenging, and complex experiences of your professional career. During the coming months, most of you will probably feel like you are on one of life's most fascinating roller costers. There will be ups and downs, difficult turns, blind spots, and at times you will feel like you are falling out of your seats. However, two years from now you will look back and, hopefully, be able to say you stayed on track and reached your destination.

The potential impact of this activity is probably far greater than you anticipate. You will be determining why, how, and when health occupations education should be delivered in New York State. To effectively do this, you must set aside individual bias and approach the assignment with open minds and an understanding that there are no sacred portions of the curriculum that should not be examined closely, and if necessary, changed.

How you and your colleagues approach this task will, to a great extent, determine the success of your committee and the health occupations education program in New York State during the 80's and 90's.

Few will disagree with the need of looking toward the future. However, how individuals approach this task will vary greatly. Three basic attitudes

will exist:

- No change is needed. Fortunately, this group is in the minority.
- Change is needed and I know what that change should be. This group is the most difficult to deal with.
- Change is needed, I think...but I am not sure what it is or how it should occur. This group is the easiest to work with and by far the most productive.

Fortunately, nearly all members of the business education futuring committee had the latter attitude. Hopefully, each of you will also approach your assignment with this attitude. You must remember, no one has the answer. If they did, this committee would not exist.

Challenges Which Must be Dealt With

Health Occupations education must cope with a series of challenges which are unique to your field. Among others are the changing employment needs, technological advancements, and the effect of our aging population. In addition to these, you will have to address a series of major challenges facing the entire education community. The following is a summary of a select group of these challenges:

- Declining Enrollments

  Until the past two years, secondary schools in New York State have always benefitted from the fact that enrollments were increasing. Since 1963, when secondary school health occupations education began its major program development, total secondary school enrollments have increased by 27%. By the end of this decade they will decrease by at least 28%. Elementary enrollments are projected to remain relatively constant during this same period. This will require a close examination of school offerings and, in some cases, the elim-

ination of low enrollment, high cost, and non-mandated programs.

How will/should this affect your program?

- Regents Competency Tests

All students are now required to pass Regents competency tests in reading, writing, and mathematics before graduating from high school. Those not passing these examinations will be required to take remedial programs.

How will/should this affect your program?

- Role of Women

Historically, many young girls have selected careers in both of our programs because of roles traditionally accepted by them. However, sex stereotyping barriers are fortunately being broken down. This will have an effect on the type of students who enroll in various programs.

How will/should this affect your program?

- Finance

The past four years have been very difficult ones in education. Austerity budgets, teacher strikes, etc., have been experienced by many districts. However, during these difficult years, the cost of public education in the state increased by $500 million a year.

The Governor's projected revenue figures show that an annual increase of $300-700 million will be available for all governmental services during the next five years. This means that the future financial pressures may be even worse than in the recent "difficult years."

This will dictate the need to take a long hard look at programs. The severity of this is heightened when it is coupled with declining secondary school enrollments.

How will/should this affect your program?

- Inflation

At the present rate of inflation, a position that pays $10,000 in 1980 will increase to $15,000 in 1985, $23,000 in 1990, and $35,000 in 1995.

This will cause employers to continue to look for more cost effective means of completing tasks.

How will/should this affect your program?

- Technology

Technology may become a more cost effective means of completing job tasks than labor. The cost of technology has dropped significantly in recent years. For example, the capacity of a computer which cost $500,000 and required physical facilities the size of a classroom in 1965 can now be duplicated for $35,000 and is no larger than a desk. In the next ten years, the cost of technology is projected to decrease by 75%-90%.

In the years ahead, technology may be less expensive than the cost of labor for many tasks now performed without technological assistance.

How will/should this affect your program?

- Unemployment/Underemployment

Unemployment has been an ongoing concern in our state for the past three decades. However, your graduates in the mid to late 80's will experience a much different employment market than

that of their predecessors. Their major problem will not be unemployment but rather underemployment.

This is caused by the declining birth rates that we have experienced in recent years. In the mid sixties, birth rates dropped from 4 million to 3 million a year. Therefore, the number of individuals entering the labor market in the mid 80's will be substantially less. At the same time, the "baby boom" children of the late 40's are entering their mass consumption years. Their high rate of consumption will cause an increase in demand for goods and services which translate into jobs. These trends will cause a major reduction in the state and national unemployment figures.

Underemployment will become a problem because of the increasingly large number of individuals receiving a college education which is not being offset by an increase in positions requiring post-secondary education. This will require many individuals to accept positions for which they are over-qualified.

How will/should this affect your program?

Communication Link - The 4C's

If the communication flowing to and from your committee is not correct--clear--concise--consistent--you will be unable to achieve your goal. For this to happen, each and every one of you will have to work very hard to assure that all communications are transmitted correctly. If just one region's communications break down, the success of your project will be threatened.

We experienced some communication breakdowns in the business education project. Literally hundreds of frustrating hours were spent attempting to correct misinformation which was transmitted in some areas. However, once

disseminated, it is very difficult to set the record straight and eliminate all confusion that misinformation generates.

To prevent such a problem in your project, I recommend that you adapt a communication plan similar to the following:

Step 1 - Communicate the need for change to educators, business leaders, and parents. Present, in detail, the type of challenges outlined above that you must deal with in the immediate years ahead.

The future will not permit status quo. Major challenges must be dealt with if you are to determine your own future. Without such an effort, your future will be left in the hands of others to be modified, remolded, or reduced as budget, enrollments, etc., require program changes.

Communicate that this is your chance to determine your future.

Step 2 - Communicate what should be included in the health occupations education program.

Too often, educators feel that they should determine what competencies must be included in an occupational program. I believe people in business and industry should determine what competencies are needed and educators should then determine how they can best be developed.

The success of health occupations education programs will not be evaluated on how many competencies are included in the program but rather how successful your graduates are in the careers you prepare them for. This will be judged by the supervisors and graduates themselves--not by educators.

Therefore, you must be sure that the competencies included in your curriculum meet business/industrial needs. Educators understand what these competencies are and why they must be the bases of your program.

Before exposing teachers and administrators to how the new program will be organized or structured, communicate and gain support of what

should be included.

Step 3 - Develop a workable structure of two-way communication on how the program should be structured (i.e., courses, modules, etc.).

This is the most difficult step because it immediately affects what and how the teacher and administrator do on a daily basis. It is always easier to philosophically agree with a change than it is to be willing to change yourself.

To overcome this barrier, I suggest open and frank discussions at regional meetings to receive educators' input on this step before developing your final recommendations or guidelines.

Summary

You have a major challenge ahead of you. How successfully you respond to this opportunity will determine the effectiveness of health occupations education in New York State throughout the rest of this century. Do not take your responsibility too lightly. Remember, neither you nor any of your counterparts have "the answer." There is no right and wrong solution; however, there is a best solution that you jointly must seek.

Congratulations on your appointment and best wishes for a successful project.

THE FUTURE OF ALLIED HEALTH EDUCATION: NEW ALLIANCES FOR THE 1980's

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Introduction

To look at the future of allied health education, we need to review changing population characteristics, disease patterns and health care needs and concerns. The allied health movement must be put into context with some of today's moves to control institutions related to the movement. A summary of the findings of the study of the National Commission on Allied Health Education and an overview of the work of the American Society of Allied Health Professionals will lead us to some suggested new alliances for the 1980's for allied health educators, practitioners, students and for our reason for being: the patients and clients to whom we deliver care.

Population Characteristics

Major changes in population characteristics in the United State include:

1. The growth rate of the United States population is slowing down, from a growth rate of 18% in the 1950's to a projected rate of 8% in the 1980's.[1] Even so, the 1960 United States Census of 180 million people increased to about 225 million in 1980 and is projected to be about 250 million by 1990.[2]
2. The birth rate of the United States has been dropping since 1957--from 25.2 births per thousand population to 14.8 in 1973.[3] This, along with increased life expectancy (currently 71 years), means that the population is growing older. In 1950, approximately 8% of the population was aged 65 or over; today, the percentage is

approaching 11%, with further increases projected.[4]

3. Other important factors influencing demands for services include an increasingly urbanized population, a work force in which the proportion of white collar workers to toal work force is increasing with a proportionate decrease in rural farm workers. In addition, our population is better educated and more affluent.[5]

Disease Patterns

With the development of new vaccines and medications, there has been a corresponding decrease in the incidence of infectious diseases. Better public health measures have shown dramatic decreases in malaria, typhoid fever, and other communicable diseases. Smallpox has been eradicated worldwide. In addition, new medicines have decreased length of hospital stay. Drugs for mental illness have been effective in helping people return to communities who otherwise would have required hospitalization. Disease patterns have had an impact on life styles. Drug abuse, including alcoholism, is on the increase--particularly among the teen-aged population. Mental illness, including suicide and homicide, is increasing. Venereal disease has reached epidemic proportions. Pelletier[6] reminds us, "we have successfully conquered polio, tuberculosis and other infectious diseases; however, there has been unparallelled increase in the 'diseases of civilization'--cardiovascular disease, cancer, arthritis and pulmonary disease. Despite concerted efforts at research and huge expenditures of money, there has been little decline in incidence since the turn of the century. There has been a slight decline in heart disease mortality since 1968, but it is directly attributed to changes in adult smoking habits and related prevention measures rather than increased spending on medical research and care." Pelletier further states: "Because of coronary bypass surgery, kidney

dialysis and prosthetic joints, we believe whatever results from our self-destructive behavior, medicine will fix us up. Cancer is increasing steadily and ranks second in cause of mortality to heart disease."[7]

Health Care Needs and Concerns

The decreasing growth rate in the U.S. indicates that we should exercise caution in further expansion of facilities and services. The declining birth rate, coupled with increased longevity, indicates there will be relatively fewer needs in pediatrics and increased needs for services for older people, with dramatic program expansion needs in the area of geriatrics. The decrease in communicable diseases and the predominance of chronic illnesses, along with diseases related to life styles, suggest shifts of emphasis toward rehabilitation and long-term care programs. Population shifts--an urbanized population, an increased proportion of white collar workers to the total work force, and decrease of rural farm workers--suggest that different occupational disease patterns will emerge. A better educated and more affluent population will have higher expectations of the health care system and will make more demands on it. The overall priority for the nation is quality health care that is available, accessible and at a cost we can afford.[8]

There is an overriding concern, however, about the cost of care. This is being translated into cost containment programs with focus on the appropriate utilization of services and facilities. It is acknowledged there are two ways to control costs of care. One is regulation and the other is competition.

The predominant viewpoint is that, in our society, the competitive models of care are the most feasible--with consumers getting a choice between such relatively new systems as Health Maintenance Organizations versus more traditional fee-for-service alternatives.

The emphasis on quality of care rather than on numbers of personnel results from a realization that we may have enough numbers of personnel, but they are badly distributed, both geographically and by specialty. There is renewed emphasis on consumer education and prevention of disease as ways of improving both quality of life while containing costs.

There is an increasing emphasis on primary care in hopes of increasing availability of services and improving access into the system. Along with this, there is an emphasis on ambulatory care services to replace costly hospitalization when possible.

We are moving toward more organized systems of health care delivery networks. In community health planning, attempts toward rational planning for services, facilities and manpower to match program outputs with community needs are being made. Finally, competitive models of care which will provide alternatives for the consumer are emerging.

The Importance of the Allied Health Movement

Allied health, as a concept, received its formal statutory introduction with the passage of the Allied Health Personnel Training Act of 1966. Although there is no universally accepted definition of allied health, the National Commission on Allied Health Education endorsed the following definition of allied health personnel: "All health personnel working toward the common goal of providing the best possible services in patient care and in health promotion" and concluded that allied health can be valuable in promoting a collaborative approach to health care.[9]

One can recognize the importance of allied health if one realizes that more than one-half of the health care work force is designated as allied health professions--the technologists, therapists, technicians, comprising a wide variety of health professions working collaboratively

with a number of other medical and health related professions. At the turn of the century, approximately one person in three working in health care delivery was a physician. Today, the ratio is approximately thirteen non-physicians to each physician working in some aspect of health care. This ratio is expected to increase in the future.[10] As you know, educational preparation for allied health personnel ranges from post-high school certificates to doctroal degree level programs. Education takes place in both hospital- and college-based programs.

Of the estimated 5 million people working in the health care industry, about 400,000 are physicians, 105,000 are dentists, about 1 million are nurses, and 2 to 3 million are classified as allied health (depending on which occupational classifications are used).[11]

The American Society of Allied Health Professions inventoried collegiate programs in 1975-76 and included 139 occupational categories. In that inventory, about 7,000 allied health programs were identified in the nation's institutions of higher education. More than one-half of the 3,000 collegiate institutions had at least one allied health program. Seventy-one percent of the public and thirty-seven percent of private institutions had such programs; 684 two-year colleges (%5.9%) and 939 four-year colleges (48.9%) had them, making a total of 1,623 of 3,055 institutions surveyed (or 53.1%).[12]

According to 1976 ASAHP statistics, there are approximately 400,000 students enrolled (or almost 4% of total collegiate enrollments) in a given year, yielding about 100,000 graduates per year. In addition, there are approximately 30,000 allied health students and graduates from military service schools per year. American Hospital Association data show 64,000 graduates per year in 32 occupations from 3,800 hospital-based programs.

Finally, about 1,000 non-collegiate post-secondary schools report having allied health programs.[13] This shows the significant size of the allied health education enterprise in the United States.

From the ASAHP inventory data, we concluded that about 20% of the programs are organized in the academic structure as a college, school or division of allied health; 46% of the programs in 1976 were located in non-health units such as colleges of arts and sciences. Although the percentage of allied health academic units to the total appears relatively small, bear in mind that the allied health concept is less than fifteen years old; therefore, this represents remarkable growth in a relatively short period of time.[14] Current enrollments in colleges are experiencing a decline due to decreases in the college age population. As competition for students increases, more institutions will likely attempt to develop allied health programs, since allied health and nursing are acknowledged to be growth areas with excellent employment opportunities upon graduation. The Bureau of Labor Statistics summarized eight factors which predict a favorable employment outlook for allied health practitioners: 1) population growth and an aging population, 2) increased interest in rehabilation, 3) increased health consciousness, 4) increased utilization of services, 5) growth of group practices, health maintenance organizations and nursing homes, 6) increased insurance and financial coverage, 7) greater awareness and acceptance of allied health personnel, and 8) the growing complexity of management and information systems.[15]

Organized Institutional Control Efforts

Allied health education activities are facing a series of emerging control efforts that will impinge on growth and development. Educational programs will face retrenchment for reasons other than inflationary costs

and drops in enrollment. These reasons include: 1) cutbacks in Federal funding support, and 2) Health Systems Agencies will insist on coordinated, more rational planning for wise use of human and financial resources. Educational institutions must carefully consider the value of consortium arrangements to share expensive facilities, equipment and clinical facilities. Inflation, scarcity and costs of energy suggest that educational planners need to reexamine academic schedules for better calendar arrangements for facilities use. Cost containment efforts will reach new heights, as the health care dollar shrinks even more in value. Clinical training facilities are expressing increased interest in reimbursement from educational facilities for supervision of allied health students on clinical affiliations. Should the patient pay for these educational services? The possibilities of training multi-competency technicians are being investigated, particularly for service in rural areas. Consumer attention to accreditation of programs and certification of personnel is on the increase. The Federal Trade Commission, for example, is challenging the elitism of some health groups and is questioning whether we are using certification in the name of quality assurance for economic rather than patient-care protection reasons. Current program accreditation arrangements are being debated: should the responsibility rest with regional bodies, the Federal government, professional membership organizations, combinations of these groups, or ??? Is the idea of program accreditation an idea that now represents an anachronism? What about the continuing competency of the individual practitioners? And who should bear the responsibility for provision of, accreditation of and cost of continuing education programs? Should continuing education be mandatory or voluntary?

The National Commission on Allied Health Education

In 1979, the National Commission on Allied Health Education (financed by a grant from the W.K. Kellogg Foundation to the American Society of Allied Health Professions) completed its two-year study of allied health education in the United States.

This was a working Commission. Its 16 Commissioners represented community and junior colleges, four-year colleges and universities, academic health centers, proprietary schools, hospitals, allied health educational programs, allied health membership organizations, physicians assistant education, laboratory education, dental auxiliary education, medicine, nursing and consumer advocacy interests.

The findings of the Commission are being published by Josey-Bass and hopefully will be available at the end of this month.[16] The Commission identified the following factors as those which will significantly affect the demand for allied health care services:

1. Increases in the aged (over 65) population. The needs for physical therapists, occupational therapists, speech pathologists, audiologists, dieticians, will continue.
2. Baby boom echo in the 1980's.
3. Greater consumer orientation to health care. Increased emphasis is being placed on self-responsibility for wellness, prevention of illness and early detection of disease.
4. Increase in primary care centers, group health practices, comprehensive health centers, and other out-of-hospital care settings.
5. Reimbursement plans will continue to emphasize preventive health care and community outreach plus the strong concentration among

planners on accessibility and continuity of services.

6. Assumption that national health insurance will stress ambulatory care and linkages of primary centers for hospitals.
7. Chronic disease patients will require services in long-term care settings.
8. Industry will increase health services for workers to cut insurance costs.
9. Increased attention to wellness and consumer education will increase need for all levels of dental personnel.

Fifteen primary recommendations, along with numerous procedural recommendations, have been outlined for consideration. The Commission outlines three basic themes: the first theme emphasizes alliances in education and practice in allied health. The Commission proposes strengthening alliances in service and education based on an appreciation of the interdependence of all occupations and understanding roles, functions, and special contributions of each. Great emphasis is placed on linking education to practice through role delineations and assuring that allied health education prepares graduates to meet performance objectives. The Commission acknowledges that educational programs must go beyond the technical aspects of practice and should include studies in human values, illness prevention, health promotion, health care delivery systems, and related subjects. Concern about proliferation of occupations is expressed by the Commission, with the recommendation that health service needs should be met, where possible, without establishing new occupations and programs. Stressed also is the importance of continuing education for continued competence. A second theme relates to planning and administration--with a focus on diversity without waste. The Commission recommends that educational programs should

be established, expanded, or terminated based on manpower requirements. Suggested are cooperative inter-institutional arrangements in which alternatives to new programs could be developed. Barriers to students in programs is a concern; recommendations are made for better articulation and information sharing among programs and institutions. A third theme relates to clinical education and matters concerning leadership and funding. Better integration of clinical and didactic education components of allied health is recommended. More adequate preparation of faculty to plan, supervise and evaluate clinical practice, along with expansion of research in clinical education theory and methods, is needed.

Other recommendations include the need for additional preparation for leadership in clinical education, substantially increased research in allied health education, and increased representation of females and minorities in leadership positions in allied health. And, finally, increased funding for allied health should be provided from a number of sources, both governmental and private, according to the Commission.

The American Society of Allied Health Professions

The Society's tripartite structure includes the Council of Educational Institutions, the Council of Individual Members and the Council of Professional Organizations.

Consistent with its mission, the Society has as its priorities as we move through the 1980's the following activities:

1. Influencing the Congress to provide full authorization funding in the FY '81 Federal budget for allied health education;
2. Provision of assistance to the Congress to amend and extend the health manpower authorizing sections of Title VII of the Public Health Service Act;
3. Dissemination and implementation of the report and recommendations

of the National Commission on Allied Health Education;

4. Conduct of a national conference of program accreditation to explore the issues from the perspectives of educational institutions, governmental and private agencies, professional organizations and educators and practitioners;
5. Continuing to serve as fiscal intermediary for the National Commission on Health Certifying Agencies as it develops order out of the chaos of the certification world;
6. Planning of a second national conference on continuing education. The first such conference provided the opportunity for a global overview of several facets of the issues: mandatory versus voluntary; costs; accreditation and credentialing; credit, needs assessment; financing; records; competency measures; curriculum approval; delivery systems. Whatever the content of the second national conference, ASAHP plans to investigate its roles and relationships as the leader of a national coalition for allied health continuing education as recommended by the National Commission on Allied Health Education.
7. Supporting the planning of a series of Committees and Task Forces exploring ASAHP's functions in specific content areas:
   a. interface of military and civilian training programs.
   b. recruitment of minority and disadvantaged students into allied health.
   c. the handicapped and allied health practitioners.
   d. advocacy of PL94-142.
   e. assistance in development of international programs and services.
   f. clinical education and hospital-based programs.

8. Developing long-range plans to further define purpose, directions and structure of the Society.
9. Updating of the Collegiate Inventory.
10. Completion by the Research Task Force of an institutional profile on allied health education programs.

Summary

Consistent with population changes, technological advances and changes in the structure of health care delivery systems, allied health educators will need to form new alliances to meet the health care demands of the 1980's and 1990's. Role delineations should strengthen education and practice links. Preparing students in the areas of human values, wellness and health promotion, cost effectiveness and quality control, the interdependence of the deliverers of care, the rights of patients and advocacy responsibilities will require flexible and imaginative curriculums. New consortium arrangements for sharing of human and financial resources plus collection of more precise data should contribute positively to cost effectiveness, to better planning among educational programs and facilitate wiser decisions re program expansion and termination.

Collaboration among allied health educational and clinical facilities and faculties should ensure better quality continuing education offerings, which should contribute to maintenance of competencies among allied health personnel. Strengthening and expansion of research efforts among practitioners and educators should help substantiate methods and procedures of service delivery as well as curriculum development and educational program planning and implementation.

In the 1980's and 1990's, allied health manpower must be educated in new ways for different functions in changed environments. Opportunities will abound for new services to be delivered to assure that the health care needs of the nation's citizens are met in an exemplary manner.

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HEALTH OCCUPATIONS EDUCATION IN NEW YORK STATE

Ruth-Ellen Ostler

Bureau of Health Occupations Education

New York State Education Department

Introduction

Ten years ago the fourth of this month -- June 1970 -- the professional field of Health Occupations Education was officially recognized in the educatonal structure of the State of New York, by the formal establishment on that date of the Bureau of Health Occupations Education. This Bureau was formed in response to the manadate of the Vocational Education Act of 1963 as amended in 1968 and in successive years, for the then rapidly expanding need in the State -- and nationally -- for an increasing diversity of well-prepared health personnel -- support, technical, professional -- to staff the expanding and varied types of health delivery agnecies -- not only hospitals, but nursing homes, extended and long-term care institutions, rehabilitation centers, home health care services, medical and dental laboratories, offices of individual and group medical and dental practitioners, and the host of other health and allied health services, departments, and agencies dealing with curative, rehabilitative, preventive, and maintenance/custodial health care. This Bureau joined the ranks of instructional specialty bureaus in the then Division of Occupational Education Instruction, in what at the time was known as the Office of Occupational Education.

The Bureau originally was structured to provide a professional staff of four, each with varied experience and diversified backgrounds, each representing a different health or allied health specialty field, or fields, and each bringing to the unit a wide range of professional practice and educational experiences. Two clerical personnel also are included in the structure. Each professional assumed responsibility for providing technical assistance/supervisory services in a particular geographic area of the State, and for specialized aspects of program and resource development according to their interests and expertise.

The Bureau is charged with developing, implementing, administering, and supervising programs across the State designed to prepare youth and adults to perform in assisting/support/entry-level health occupations in support of and under the supervision of health care professionals; and with promoting articulation with postsecondary programs for career mobility and advancement.

Having just described the initial Bureau structure for you, I now must tell you that due to the need to meet some additional mandates by the Federal government, and a lack of financial resources to add new Department staff, our entire Office currently is undergoing some reorganization, which results in the reallocation of some staff from many existing units. The Bureau of Health Occupations Education is no exception. And some things happen quickly. As of next week this Bureau will function at half-staff, as the new Civil Rights unit will claim two of our professionals Dr. Karl S. Wittman and Mrs. Muriel S. Kole, and one of our clerical staff. We will surely miss them all, but wish them well in this new venture. Miss Conley's and my role will change somewhat in terms of the services we can deliver, but all of that is yet to be determined.

However, there will be no change in the status and operation of the HOE Futuring Project. Futuring in all Occupational Education fields is one of the Assistant Commissioner Freeborne's highest priorities and is ever-more important in these days of increasing needs and limited resources.

Overview of Presentation

In response to your requests for brief historical perspective, and specific types of information about the existing Health Occupations Education program in this State, we have attempted to respond to as many of the requested elements as has been possible, within time and staff limitations and various intervening priorities. The staff of our Division of Occupational Education Planning, Research and Evaluation have been most helpful in gathering some of the data - some received as late as Tuesday afternoon.

Therefore, together we will examine the following:

- Brief Historical Perspective
- Influences on Programming NOW - Jobs, Agencies, Populations, Other
- Size and Diversity of the HOE Program - Enrollment- Ten Year Summary
- Program Locations
- Current Program Standards- Job Outcomes, Training Sites
- Instructional Staff Characteristics
- Components of Instruction
- Issue of Classroom vs. Clinical Experience - Study Report
- Apparent Strengths, Constraints, Problems

As we progress through each part, you will note that we have posed a series of questions for your consideration, related to the topic. These may be helpful supplements as you proceed with your discussions and planning this afternoon and tomorrow.

Health Occupations Education Statewide Program - Historical Perspective/Job Orientation

In the mid-to late 60's the big push to prepare increasing numbers of health care personnel at all levels were generated by all manner of Federal and State legislation geared to providing wider and more comprehensive health services to the consuming public. The State Labor Department established a Health Manpower Task Force. The State Health Department conducted a variety of studies. The Country was anticipating imminent definition of a Federal health care policy and major legislation to support equal access to health care by all citizens regardless of economic resources (We still await this!). Valid projections of health manpower needs were hard to come by - and still are.

However, bits and pieces of social and health legislation revealed emphasis on the need for prepared auxiliary/assisting/supportive health personnel in several fields - auxiliaries in Dentistry and Medicine, increases in the Nursing field, community health services personnel - and something called health care in the home.

The Department of Labor expanded health occupations titles in its revised DOT Code Book. The 1963 Vocational Education Act specifically identified Health Occupations Education as one of the major fields for expansion, with funding attached. This for Education, served as the biggest impetus to expansion of programs in this field. Before the Bureau of Health Occupatiosn Education was created in 1970, the Practical Nursing Program was firmly established, and finally legislated, and a few programs were in place to prepare Dental and Medical Assisting Personnel, as well as Nurse's Aides and Orderlies, primarily in the large cities, where vocational high schools were already operating. In the mid-60's the Bureau of Home

Economics Education was charged with developing a program to prepare beginning-level workers in the Health field. This effort resulted in initiation of several experimental programs and the final publication of the Health Services Training Guide, to prepare workers for work in related occupations grouped in the three "clusters." (Attachments No. 2 and No. 3). This was the forerunner of the present day Health Assisting program. This, and the others I have mentioned which were scattered around the State became the responsibility of the new Bureau, and with the rapid increases in area occupational centers under BOCES Boards, accompanied by area and regional indentification of job needs, expansion began in earnest, and support materials were gradually developed for existing and new programs.

Attachment No. 4 gives the program titles currently identified in the secondary level Basic Educational Data System (BEDS). Early in the Bureau's life it was expected that distinct programs would be introduced in relation to each program title listed. This has not been the case.

A double asterisk indicates which of the titles crossed out are among the areas that may be included in a locally offered Health Assisting program, depending upon the job market in the particular area/region. These job titles are listed as possible for this program in Attachment No. 5 (HOE-IS #20).

Home Health Assisting and Medical Emergency Assisting are primarily adult-level short term offerings, but may be included in a secondary-level Health Assisting program also. School Health Assisting, developed in conjunction with the Department's Bureau of School Health Education and Services, was designed primarily to meet a need in the school districts across the State for personnel to assist School Nurse Teachers and Civil

Service Nurses in providing required services for children and youth in the school systems. This curriculum has been used extnasively by School Nurse Teachers and Supervisors in training individually the adult and in-school youth assistants they need, but never offered as a group classroom instructional program anywhere in the State.

Opthalmic Dispensing is offered only in the George Washington Vocational High School in New York City, and, because it was in existence prior to 1970, and its graduates are employed or go on to further education, obviously meets a need which has not been identified anywhere else in the State.

Remaining on the list then are seven prime program areas, which, with Home Health Assisting, will be identified as we present some of the statistical data during this report:

DENTAL ASSISTING	MEDICAL ASSISTING
DENTAL LABORATORY TECHNOLOGY	MEDICAL LABORATORY ASSISTING
HEALTH ASSISTING	NURSE'S ASSISTANT

PRACTICAL NURSING

A brief desciption of the State standards and job titles associated with six of the above is given on Attachment No. 6, entitled "Program Standards for Selected Health Occupations Education Programs." As previously noted, guidelines for Health Assisting programs are provided in HOE-IS #20. (Attachment No. 5).

Attachment No. 7 gives the current titles used in the State's Higher Education General Information System (HEGIS) for collection of program and enrollment data relative to Health Science/Health Technologies/ Allied Health programs primarily, but not exclusively offered as certificate or associate degree programs in two-year and community colleges. To add to our general information (or confusion), also included is a copy

of the Draft (Attachment No. 8) listing the planned new Department of Education program title classification system, which is intended to combine in one system titles and descriptions of all possible program offerings at secondary, adult, community college, and university levels. Many of you representing educational institutions may be familiar with this listing. For those who wish to see the full draft document as it pertains to programs in the health field, we have a copy among our resources.

Questions to be considered relative to jobs and curriculum include:

* What will be the Health Occupations jobs of the future?
* What competencies will each require?
* What common and what unique competencies?
* Will this require change from present program design?
* In what way?

Health Occupations Education Statewide Program - Secondary Level

The Department is responsible for defining the parameters of a State-wide Helath Occupations Education program framework to assure secondary-level students access to both ELECTIVE and MAJOR SEQUENCE options in preparing for work in this fiels as part of their educatonal programs leading to a high school diploma. The State-wide program must be sufficiently flexible for choice and decision-making by local Boards of Education in designing and implementing programs which reflect needs of the local employment market and of the students to be served in their districts.

Attachment No. 1, "Health Occupations Education in New York State" (February 1980), identifies for the secondary program level one intoductory-type course, seven 2-year Major Sequence options, and two 1/2 - 1-year Elective courses, as summarized in Attachment No. 9. Due to equipment and staffing costs, the majority of local school districts throughout the

State, other than the Major Cities, provide their students with Health Occupations Education options under a shared services arrangement with a Board of Cooperative Educational Services. The large cities, New York City, Buffalo, Rochester, Syracuse, Yonkers, and Albany, as well as most of the other nine local school districts offering HOE programs, are able to schedule multiple periods or longer than the usual 45-minute period for HOE programs. Thus a specific minimum hour designation has developed for each program as is indicated on the chart, ranging from 1/2 year (200 hours) to 2 years (800 hours). In the case of Practical Nursing, with a 1,200-hour requirement, various patterns combining regular school day, after school hours, and/or a month during the summer are utilized for supervised clinical experience, and to complete the time requirement.

All secondary-level programs are considered PREPARATORY, with the exception of Health Occupations Foundations, which is designated as an introductory, pre-vocational, orientation to health careers-type program. It is particularly designed for adaptation to local school district one-period programming and scheduling, as an introduction to health careers and to generate student interest in preparing for work in the health care industry, through further study in one of the secondary-level options, and in a possible career in the health field requiring advanced preparation. We have had few "takers" for this option, so it has never been implemented to any extent.

Curriculum materials for the secondary options in the form of syllabi, program developent guides, facilities guides, and similar items are identified on your list.

Student Leadership Development

An important part of the secondary HOE program is the curriculum-based organization for students enrolled in Health Occupations Education programs, the New York State Association of Health Occupations Education Students of America (HOSA). Experiences in developing leadership skills are integrated within the instruction and take place both within the classroom and laboratory and outside in the community, Region, State and Nation. All students enrolled in a particular HOE class are considered to be HOSA members although participation in State and National activities involves a membership fee. Leadership development experiences also are provided for some HOE students through the New York State Association of Vocational-Industrial Clubs of America (VICA), although the opportunity for relationship to the health care industry and to HOE curriculum and instruction is not as direct, since this organization serves students enrolled in a variety of other Occupational Education programs, and group member activities frequently are external to the classroom.

In relation to program design the following questions are offered for your consideration:

* Are the current programs appropriate for the secondary level in HOE program design of the future?
* Will there continue to be a demand for the workers currently prepared?
* What will be the expected level of performance?
* Are the competencies common to all programs?
* What new programs/program components should be included?
* Are there more cost-effective designs?

Programs offered for adults and out-of-school youth may be PREPARATORY or SUPPLEMENTARY in nature. The term PREPARATORY applies to generic training and is defined as providing the theoretical base and skill development experiences that enable the student to develop the full complement of competencies necessary for entry-level performance in one or more specific job titles identified as the occupational out-comes for the particular program.

The term SUPPLEMENTARY as applied to non-generic, short-term courses generally ranging from 60 to 300 hours in length, is defined as focusing on selected specialized theory and/or skills which may be requested by industry relative to identified needs as they arise for a particular group of workers, or offered for upgrading, retraining and/or advancement purposes, to enable students to review or revitalize already existing skills or develop skill in new techniques relating to a particular job. The term also may be applied to short-term courses which are designed to be combined over a period of time to enable a student to complete a full generic program in a particular field.

All secondary-level MAJOR SEQUENCE options are examples of PREPARATORY programs which may be adapted for adult-level programming in various scheduling patterns - full-day for a period of weeks or months, late afternoon or evening, or in some other manner which can be arranged to satisfy both students and school authorities. Home Health Assisting, Emergency Medical Assisting, Nurse's Assistant, Ward Clerk, and EKG Technician are examples of generic PREPARATORY short-term courses offered at the adult level.

Some examples of SUPPLEMENTARY offerings at the adult level include Pharmacology for Practical Nurses, Metrics for Health Workers, Practical Nursing Refresher, CPR, and Medical Terminology.

Questions for your consideration include:

* How should the need of adults be served in the HOE design of the future?
* Will industry continue to identify new and specialized needs?
* What role can or should the public and private schools play in inservice/continuing education for employed workers?

Health Occupations Education Statewide Program - Postsecondary Level

In addition to secondary and adult levels, HOE programs are offered throughout New York State at the postsecondary level. Attachment No. 8 lists the program areas for which data are collected through the HEGIS system as previously mentioned. While our Committee charge deals with secondary and adult programming particularly, articulation with post-secondary programming is an important consideration, and it is neceseary to examine some figures and concerns relative to this level, in order to see existing and potential relationships, and make some recommendations as to what programs are most appropriately offered at which levels in the future, based upon labor market demand, competency levels identified, and effective utilization of fiscal, material, and human resources.

You may decide to request a full presentation on two-year postsecondary Health Occupations Education programming - generally identified as Health Sciences/Health Technologies/Allied Health at this level.

Programs at this level are directed more usually to preparation of the technical level health practitioner/professional; while those at secondary and adult levels focus on preparation for assisting-level, support occupations, including some technical-level personnel.

Factors Influencing Programming

It is important to recognize that many factors govern the programming options on Statewide level, and correspondingly, at Regional and Local district levels, in meeting the needs of both the employment market and various population groups to be served. Among such influences are:

Job Availability - We have discussed this factor earlier in this presentation, but the scope and number of health job openings in various areas of the State differ widely. These depend upon the economy, the number and types of health care delivery and health industry support agencies within the particular region, among other aspects. New York City and the Greater New York City Metropolitan area have by far the largest number and greatest variety of direct and supportive health care institutions, agencies and groups, and of health care jobs, by far the greatest number of people of all ages requiring various types of care; but also have the largest pool of prepared personnel and persons requiring training to fill these jobs in the State. There is just no comparison between this area and Region 6 in the North Country or Region 13, in the Western part of the State, for example.

Training Sites/Facilities Available - Current facilities specifications for each program are very clear-cut, requiring adequate space for presentation of theory, directed in-school laboratory practice, and on-job-site locations/affiliations for supervised clinical experience. In a majority of the public Major City, BOCES, LEA and two-year college centers, space for the in-school components is more than adequate, the majority having been financed through VEA and other Federal fund sources. Many private-for-profit (proprietary) schools have been able to provide at least adequate

in-school facilities, but some have great problems with this.

A major problem, however, is provision of adequate Supervised Clinical Experience (SCE) component. This is a major curriculum/instructional component of every HOE program design. While affiliations in hospitals, nursing homes, extended care facilities, clinics, and similar institutional care settings have, for the most part been available and adequate, there is the increasingly-apparent problem of saturation as more and more agencies seek arrangements within the same institutions. In addition, problems are very apparent in scheduling and supervising adequately one-on-one affiliations, such as in practitioners' offices, in-home settings, dental and medical laboratories, and similar sites.

Modes of Training/Curriculum/Instructional Components - Three major components of every HOE program design are 1) presentation of theoretical content which is task-oriented, 2) provision for directed in-school laboratory practice for skill development, and 3) Supervised Clinical Experience (SCE) as mentioned above. Attachment No. 10, HOE-IS #18, describes these components more completely, as does the bulletin, HOE in New York State. HOE-IS #18 was developed to focus on implementation of this third component exclusively, in view of the extreme importance placed upon carefully designed and supervised experience directly in job settings. Attachment No. 11 contains an abstract of the SCE study recently completed by the Department, which revealed that nearly 85 percent of all programs at the secondary, adult, and postsecondary levels for the eight HOE programs surveyed were found to include an SCE component.

Those not including SCE tended to be SUPLEMENTARY adult-level programs or in a few instances reported providing laboratory simulations, well designed and executed. Attachment No. 12 shows for the eight programs, the range and variations in number of programs, these including SCE, and hours of SCE provided. Summaries of this study are available for the Committee and a copy of the full report ia available for inspection, although its release has not yet been authorized.

. Population Groups Served

Increasing emphasis within State, Regional, and Local programming in all Occupational Instructional areas, including Health Occupations Education, has been and will continue to be, placed on serving the diversified population groups within society - on helping persons of all ages and characteristics become employable, self-supporting, self-respecting, and able to contribute to society to the extent that each is able. Federal and State mandates and dollar support accompany these emphases which include:

. Disadvantaged Youth and Adults - persons who, for whatever reason, unable to perform to capacity, to profit from general education approaches - emphasis on development of minimum basic skills, particularly in reading, writing, and mathematics

. Handicapped Youth and Adults - persons with handicapping conditions physical, mental, emotional

. Sex-stereotyped Women (and Men, particularly in the Health Occupations) emphasis on removing sex barriers in the market place and in preparation for work - non-traditional occupations (relative to each sex)

- Limited English-Speaking Youth and Adults - persons whose prime language at home is other than English, but who must function in job settings and a society which is mainly English-speaking.
- Displaced Homemeakers - Adults who are redirecting life's course, must enter or return to the job market, require full-time rather than part-time jobs, lack adequate skills.

Some questions that must be addressed are:

* What kinds of jobs will be available for the persons with various special needs?
* And how can the Health Occupations Education program of the future be designed to accomodate such persons?
* Where will these needs be most evident?

Size and Diversity of the HOE Program

In response to your request for information about number of persons whom the Statewide HOE program really serves and what the trends appear to be, I refer you to Attachement No. 13, the table entitled "Health Occupations Education Enrollment by Program Areas, Secondary and Adult Levels, 1969-80." Although accurate figures for 1979-80 were not available in time for this presentation, the table shows an overall growtn in number of secondary and adult level students served, from slightly over 11,000 in 1969-70 to a peak of 25,000 in 1977-78 and a leveling off to approximately 19,000 last year, 1978-9, with corresponding change in general noted in most program fields listed. A 30% increase in enrollment is noted since 1969-70.

Some changes represent better reporting, such as the reduction in "Other" at both secondary and adult levels and "Nurse's Assistant" at the secondary level, with assignment of enrollees to one of the other

program categories. The reduction in Practical Nursing reflects a trend toward closing programs at both levels where there is a slightly reduced demand in selected areas of the State and/or programs which consistently have produced graduates not able to pass the licensing examination. Reduction in Medical Laboratory Assisting at the adult level reflects an increased demand on the part of laboratory employers for graduates of nationally accreditd programs.

Continuing program growth is noted relative to Home Health Assisting programs at the adult level. This of course responds to the continually increasing demand for home health care workers to serve the convalescent and geriatric populations in today's society.

Employment of HOE Graduates

Employment records are not easily accessible. The table of Attachment No. 14 indicates that only slightly over one-third of the graduates completing HOE programs during 1977-78 reported being employed in a related or slightly related occupation. Nearly one-fourth of the secondary graduates, but fewer than 5 percent of the adults reported further study. As with many follow-up studies about nine percent of the secondary graduates, but approximately 30 percent of the adult graduates of that year failed to respond. Due to the vagaries of statistical reporting, trends are not currently available.

Who Are the Teacher of HOE?

Attachment No. 15 provides some interesting information about the teachers of HOE programs. These data are collected consistently for secondary level teachers. Teachers at this level are subject to specific certification requirements, which apply also to teachers of adult-level HOE programs, but are not collected regularly nor in the same manner.

Over the last ten years HOE teachers have acquired more educational preparation, with a reduction from 50 to 23% reporting less than a baccalaureate degree, and from 39 to 28% reporting the baccalaureate, with corresponding increases in the percent holding baccalaureates, and bachelors plus 30 hours, and masters degrees.

Accordingly the percent of uncertified teachers has diminished (37% in 70-71 to only 5% in 1979-80) and teachers properly certified in their fields have increased by over 50 percent to last year's figure of nearly 84 percent.

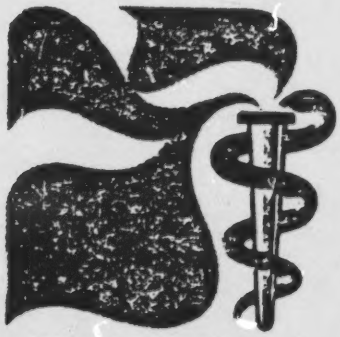
However, at the same time the figures show a trend toward an older teacher population. In 1970-71, 65.1 percent were age 48 or less, while in 1979-80 only slightly over 50 percent reported being in that category. This, coupled with anticipated changes in teacher preparation and certification imply the need for serious attention to the preparation of teachers in this field.

To this information, you will add a component dealing with the qualifications of the teachers of HOE in relation to program changes you may propose. Thus, concerted attention will need to be given to HOE teacher qualifications and preparation for the future.

There is much information to digest in this presentation, and I have posed many questions for your consideration as you continue the process of determining the future for this field. Thank you.

Attachment No. 1

HEALTH OCCUPATIONS EDUCATION IN NEW YORK STATE



THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Division of Occupational Education Instruction and Curriculum
Bureau of Health Occupations Education
Albany, New York 12230
February 1980

HEALTH OCCUPATIONS EDUCATION

PROGRAM GOALS

Health Occupations Education is a field of occupational study which focuses on preparation of youth and adults for work in the health care industry. Course organization for the Statewide program in Health Occupations Education is based upon identified major manpower employment needs. Wherever possible, separate program options are planned to provide the student with a set of skills which will permit flexibilty in employment and expedite training mobility.

The overall program is designed to provide opportunity for students to select MAJOR SEQUENCE and/or ELECTIVE options in the study of and preparation for a health career. Through the various program options persons interested in the field are prepared for initial employment, for advancement on the job, and for further study in a specialized health field. Health workers trained are prepared to aid or assist and work under the direct supervision of, a licensed, registered, or certified health professional.

Curriculum and instructional strategies in Health Occupations Education Programs are competency-based, designed to help each individual student develop proficiency in performance of specific skills required in the chosen occupational field.

Supervised clinical experience is an integral part of every Health Occupations Education program through scheduled assignments under supervision in health care delivery sites. Alternative modes are possible for providing this instructional component.

Course credit is assigned on the basis of 2 credits for 1 year of study equivalent to a minimum of 160 sessions of 2½ hours duration.

PROGRAM OPPORTUNITIES

General Education Courses for Related Study

While there are no prerequistes for any Health Occupations Education course offerings, prior or concurrent study is desirable in fields related to the performance of health care personnel, such as, but not limited to, chemistry, biology, mathematics, personal and family living, family nutrition, health education, typewriting, office practice, and others.

Introductory Program in Health Occupations Education (See Course Descriptions)

A local district may choose to offer an introductory program as a first course in a sequence, or as an elective career orientation program for any students in Grades 10-12. The suggested State Program Title is: HEALTH OCCUPATIONS

FOUNDATIONS. If the programs are scheduled for ½ - 1 year, 200 - 400 hours, 1 credit per term, a maximum of 2 credits may be granted. Selected elements of such a program may be designed to serve as the first one or two modules of common instruction taken by students enrolled in any Health Occupations Education option offered locally.

Major Sequence Options in Health Occupations Education (See Course Descriptions)

MAJOR SEQUENCE programs in Health Occupations Education meet Group II requirements at the secondary level. Each consists of a minimum 800 hour program of sequential study, through classroom, laboratory, and supervised clinical experiences. A minimum of 1200 hours is required for Practical Nursing. A maximum of 4 units of credit over a two year period is available for each MAJOR SEQUENCE.

DENTAL ASSISTING
DENTAL LABORATORY TECHNOLOGY
HEALTH ASSISTING
MEDICAL ASSISTING
MEDICAL LABORATORY ASSISTING
OPHTHALMIC DISPENSING
PRACTICAL NURSING

Elective Offerings in Health Occupations Education (See Course Descriptions)

Three courses in the State Program are designed specifically as as ELECTIVE offerings. These may be scheduled for ½ - 1 year, 200 - 400 hours, for a maximum of 2 credits to meet Group III requirements. The options are:

HEALTH OCCUPATIONS FOUNDATIONS
(See also Page 1)

NURSE'S ASSISTING
SCHOOL HEALTH ASSISTING

Students who already have completed a major sequence in another field may choose any of the previously mentioned sequences as either a second major, or for ELECTIVE credits. Under special conditions, the following 2-year MAJOR SEQUENCE programs may be designed as 1-year, 400 hour offerings, for a maximum of 2 ELECTIVE credits.

DENTAL ASSISTING
HEALTH ASSISTING
MEDICAL ASSISTING
MEDICAL LABORATORY ASSISTING

Future Health Occupations Education Courses Based on Job Needs

Where a local employment need arises and as new health job needs are identified across the State, additional MAJOR SEQUENCE or ELECTIVE courses will be devloped. A local district may develop a course of study to prepare individuals for selected health occupations which are in local or regional demand, but where a State curriculum is not yet available, and submit it to the Department for approval.

Flexible Scheduling for Maximum Student Gain

Where a one-half year or one-year Health Occupations Foundations course is offered in the area center or local district, it is possible to combine this program with a one-year elective course, such as Nurse's Assisting or School Health Assisting to provide a 3- to 4-credit major sequence identified by the second-year course taken.

Various alternate sequence patterns may be developed for selected students under carefully defined circumstances. Locally proposed plans must be submitted to the Division of Curriculum Development for review and approval.

Cooperative Occupational Education in Health Occupations Education (See Course Description)

Cooperative Occupation Education Programs are established by mutual agreement with particular local employers. Students are placed on the payroll of the employer under a directed plan of study and work which is cooperatively supervised by the school district's Cooperative Occupational Education Coordinator and personnel assigned by the employer.

Students interested in health careers may be scheduled for cooperative occupational education in specific health occupations in two ways: 1) as part of a Diversified Cooperative Occupational Education program in a district, or 2) if the group of students in health occupations placement is sufficiently large, a separate Health Occupations Cooperative program may be provided.

This pattern of providing training is particularly appropriate if the employment demand for trained workers in a particular health occupation occurs only on an occasional basis. Another pattern might be when workers in a particular health job are needed only in limited numbers, for which the establishment of a regular Health Occupations Education facility and fully-staffed program is not feasible. COOPERATIVE OCCUPATIONAL EDUCATION (HEALTH OCCUPATIONS) also can serve as a capstone experience for students who have advanced in a regular Health Occupations Education program. A maximum of 2 units of credit can be earned by students, based upon 1/2 unit per 150 hours of work.

Student Leadership Development in Health Occupations Education through HOSA

Experiences in leadership development form an integral part of each Health Occupations Education Curriculum. Every enrolled student is eligible for membership in the local chapter of the New York State Association of Health Occupations Students of America, affiliated with the national student organization, Health Occupations Students of America (HOSA). HOSA activities in the classroom, the community and on State and national levels planned and developed by student members, are designed to extend and implement curriculum teachings.

Health Occupations Education Program for Adults

Adult courses may be offered in any of the major Health Occupations Education subject areas identified in the secondary program. Course offerings for adults may vary each year in response to the demand for health care workers in a specific occupation, and to adult student interest. Preparatory adult programs must meet the same performance standards as those at the secondary level.

Course Descriptions in Health Occupations Education

HEALTH OCCUPATIONS FOUNDATIONS, ½ - 1 year, 200-400 hours, 1 credit per term, maximum of 2 credits.

This is an introductory or core program to be offered prior to the secondary/adult level Health Occupations Education options in specific fields of preparation. It will provide the student attitudes that are common to job performance in a variety of specific health occupations fields. Students have opportunity to explore various career paths in the health care industry as a basis for making personal career decisions. Selected skills which may be applied to first level employment in the health care field will be developed. Classroom instruction, laboratory practice, and supervised clinical experience focus on health care delivery agencies and health manpower, the health worker as resource in health Maintenance, basic related sciences, communications, and interpersonal relationships, and development of selected skills basic to performance as a beginning worker in the health care delivery system.

DENTAL ASSISTING, 2 years, 2 credits per year, maximum of 4 credits.*

This program is designed to prepare youth and adults for work in an assisting capacity under the supervision of the dentist and/or other licensed professional dental personnel. Focus through the competing based curriculum and instruction is on the role of the assistant at chairside, in the dental operatory, in the dental office laboratory, and in the dental office and reception area. Work may be performed in hospital clinics, neighborhood or community health centers, dentist's offices, retirement community infirmaries, and similar locations.

DENTAL LABORATORY TECHNOLOGY. 2 years, 800 hours, 2 credits per year, maximum of 4 credits.*

This program is designed to prepare youth and adults for work as an entry-level dental laboratory technician and assistant under the direction of experienced technicians, technologists, and other professional dental personnel. The curriculum focuses on basic skills and knowledge necessary to make and repair such dental prosthetics as dentures, crown, bridges, inlays, and orthodontics appliances under the direction of, or conforming to the prescription of, the licensed dentist. Duties are performed in offices of private-practice dentists, hospitals, clinics, educational and research institutions, or manufacturing firms.

HEALTH ASSISTING. 1 - 2 years, 400 - 800 hours, 2 credits per year, maximum of 4 credits.

This program is designed to prepare youth and adults for work in a cluster of three or more entry-level job titles in the health care industry. These job titles share a common care of job skills and related knowledge, and in addition, each has selected job skills and knowledge unique to the title and/or the place in which the job is performed. Specific occupational titles in the cluster may be different for each occupational center or school district. Based upon the actual job market demands

* 1 -year, 400 hour program options are possible under selected conditions.

in the community or region of the State, occupational titles which may be chose include: central supply aide, physical therapy aide, psychiatric aide/mental health aide, rehabilitation aide, and ward clerk. Where an approved adult program in Home Health Assisting is accessible, the Occupational Cluster may include homemaker/personal care services workers and home health aide. Other selected job titles may be considered if warranted by labor market demands and/or in cooperation with other related skill fields. Competency-based instructional content, laboratory practice, and supervised clinical experience focus on development of proficiency in performance of tasks required for the jobs in the lo--cal cluster. Duties may be performed under the supervision of professional nursing, medical and allied health personnel in hospitals, clinics, community health centers, practitioner's offices, homes, and other health care delivery sites.

MEDICAL ASSISTING. 2 years, 800 hours, 2 credits per year, maximum of 4 credits.*

This program is designed to prepare youth and adults for supportive work performed under the direction of a physician in the private physician's office, large group practices, or appropriate hospital, nursing home, health center, or clinical office settings. The performance-based curriculum is directed toward development of the skills and knowledge necessary to providing office management services, maintaining and operating the medical office, assisting the physician with patient histories, examinations, and medical procedures, and performing routine test.

MEDICAL LABORATORY ASSISTING. 2 years, 800 hours, 2 credits per year, maximum of 4 credits.*

This program is designed to prepare youth and adults for supportive work performed under the direction of medical laboratory technicians, medical technologists, or pathologists in commerical laboratories, hospital laboratories, clinics, public health agencies, pharmaceutical firms, research institutions, or universities. The competency-based curriculum focuses on development of skills in the operation and maintenance of laboratory equipment and supplies, operation and maintenance of a laboratory supply area, performance of basic diagnostic test, provision of general routine activities relating to laboratory operations.

OPTHALMIC DISPENSING, 2 years, 800 hours, 2 credits per year, maximum of 4 credits.

This program is planned to prepare youth and adults for work performed under the direction of a licensed dispensing optician in optical shops and laboratories. Through classroom and laboratory competency-based instruction and supervised clinical experience, students develop skills in measurement and fitting of lenses and making, assembling, and adjusting lenses in frames.

NURSING, PRACTICAL, 2 years plus one summer or one post-graduate term, 1200 hours, 2 credits per years, maximum of 4 credits.

This program is designed to prepare youth and adults for admission to the practical nurse licensing examination and for employment as licensed practical nurses. Licensed practical nurses work under the direction of a registered professional nurse or licensed or otherwise legally authorized physician or dentist. They perform "tasks and responsibilities within the framework of case-finding, health teaching, health counseling, and provision of supportive and restorative care . . . ." (Education Law, Title VIII, Article 139, section 6902.2). Work genrally is performed in hospitals, nursing homes, community health centers, private physician's offices, and related health delivery agencies.

* 1 - year, 400 hour program options are possible under selected conditions.

This program must be registered by the State Education Department so that graduates of the program will be eligible for admission to the examination for licensed practical nurse. All contacts relative to registration, re-registration. and licensing should be addressed to the Executive Secretary, State Board for Nursing, Nursing Education Unit, State Education Department, Cultural Education Center, Albany 12230. Program implementation, operation, and improvement are supervised by the professional staff of the Nursing Education Unit. Competency-based classroom, laboratory, and clinical experiences focus on selected natural, social, and health science principles basic to practical nursing including communication skills and vocational relationships, and principles of practical nursing.

COOPERATIVE OCCUPATIONAL EDUCATION (HEALTH OCCUPATIONS). 1/2 - 2 years, 150-600 hours, 1/2 credit per 150 hours, maximum of 2 credits.

The Cooperative Occupational Education Program for the Health Occupations Education student may be developed to combine with one of the MAJOR SEQUENCE or ELECTIVE offerings as a culminating experience or to provide initial on-job training for a particular health occupation. In either case a minimum of one period of related instruction is required. A carefully designed training plan is developed for each student, specifying the unique objectives, types of experiences, means of providing related theory, and arrangements for appropriate supervision and assessment of progress.

PROGRAM SUPPORT MATERIALS

I - Planning and Assessment

Health Occupations Education in New York State. Presents the purposes, descriptions and a scope and sequence of health occupations education curriculum offerings.

Health Occupations Education Program Review Guide. An instrument prepared for use by local and State personnel in total health occupations education program assessment.

Health Occupations Education Optional Test Item Series. Each provides test items in multiple choice and matching format designed in relation to specific curriculums:

- Dental Assisting (#1)
- Health Services (#2)
- Medical Assisting(#3)
- Nurse's Assisting(#4)

Health Occupations Education: Home Health Assisting Pre-Assessment Instrument. An assessment instrument designed to measure skills of students upon entry into the Home Health Assisting program (In process).

Measurement of Student Achievement in Health Occupation Education. Provides information about assessment of student progress in health occupations education; discusses use of various measurement techniques; provides examples of useful instruments.

II - Program and Curriculum Design

Health Occupations Education Syllabuses. Each provides minimum curriculum standards for Regents program credit in selected fields:

- Dental Assisting
- Medical Assisting
- Nurse's Assistant

Health Occupations Education Program Development Guide Series. A series of guides each focused on developing a health occupations education sequential program in a specific field. Each provides information on occupational objectives, composition and use of consultant/advisory commitees, facilities, and curricular resources:

- Dental Assisting
- Dental Laboratory Technology
- Health Assisting
- Home Health Assisting
- Medical Laboratory Assisting
- Nurse's Assistant
- School Health Assisting
- Practical Nursing

Health Occupations Students of America: New York State Association Handbook. Provides guidelines for use in establishing and operating a local chapter, and integrating activities within Health Occupations Education curriculum.

Health Occupations Education Information Series. A series of brief statements of standards and guidelines dealing with specific health occcupations education program development:

- Health Occupations Education Program Titling (#6)
- Health Occupations Education as a Component of Career Education (#7)
- Health Manpower Licensure, Registration and Other Certification (#8)
- Health Assisting Programs in New York State (#15)
- Metrics in Health Occupations Education Programs (#16)
- Venipuncture: Policy and guidelines for Instruction in Selected Health Occupations Education Programs (#17)
- Supervised Clinical Experience - One of Three Esential Components of Health Occupations Education Programs (#18)
- X-ray Instruction in Health Occupations Education: Medical Assisting and Dental Assisting Programs - Legal Limitations, Maximum Hours Permitted and Limitations Necessary Under Public Health Law (#19)
- Guidelines for Designing the Local Health Occupations Education Program in Health Assisting (#20)

Chart 1. DESCRIPTIONS OF SELECTED HEALTH SERVICES BY CLUSTERS OF OCCUPATIONS

	Occupations	Job Description
Occupational Cluster A - Occupations Performed to Assist Professional Medical Personnel in General Patient Care		
Level 1	Emergency Entrance Attendant	Assists persons entering hospital through emergency entrance
	Ambulance Attendant	Assist professional emergency medical staff or ambulance driver, transporting and admitting emergency patients
	First-Aid Attendant	Renders first aid to injured or ill employees at industrial plant, commercial establishment, mine, or construction site under the supervision of a nurse or physician
Level 2	Nurse Aide, Orderly	Assists nurses and physicians in the care of hospital patients
	Hospital, Nursing Home Aide	Assists professional and managerial personnel in routine institution and patient care activities
	Nurse Aide, Special Service	Assists nurses and physicians in care of patients in specialized hospital units
	Home Health Helper, Companion to Convalescent	Cares for elderly, convalescent, or handicapped persons in the home, performing a variety of duties
Occupational Cluster B - Occupations Performed to Assist Professional Medical Personnel in the Care of Persons With Selected Handicaps		
Level 1	Cottage Parent Helper	Assists with the mentally retarded and the epileptic in their daily activities and needs
	Special School Child Care Attendant	Attends to personal needs of handicapped children while in school
	Companion to the Elderly, Handicapped; Geriatric Aide	Assists with personal needs of elderly, handicapped, or convalescent people, acting as aide or friend, on same or an acceptable social level
Level 2	Recreational Therapy Helper	Assists professional staff in carrying out a medically approved recreational program for patients in hospitals and other institutions
	Physical Therapy Attendant	Assists Physical Therapist to prepare patients for treatment
	Home Rehabilitation Aide	Assists under professional guidance in rehabilitating patients who are on a supervised home care program
	Psychiatric Aide	Assists professional nurses and medical staff in the care of mentally ill patients
	Occupational Therapy Helper	Assists Occupational Therapist in administering medically oriented occupational program in rehabilitating patients in hospitals and similar institutions
Occupational Cluster C - Occupations Performed to Provide Health Care-Related Services		
Level 1	Laboratory Equipment Cleaner	Cleans laboratory equipment such as glassware, metal instruments, sinks, tables, and test panels
	Central Supply Worker Attendant	Cleans, sterilizes, and assembles hospital equipment, supplies, and instruments according to prescribed procedures and techniques, performing any combination of related tasks
	Medical Supply Aide	Assists medical supply supervisor in preparing, assembling, and distributing medical supplies
	Hospital Nursing Home Maid	Cleans hospital or nursing home wards, rooms, baths, laboratories, offices and halls
	Formula Room Worker	Prepares, bottles, and sterilizes infant formulas
	Tray-Line Worker	Prepares and delivers food trays to hospital patients, performing any combination of related duties on tray line
Level 2	Medical Office Helper	Performs various duties under the direction of doctor or nurse in medical offices
	Hospital Guide	Directs or escorts incoming patients or visitors from hospital admitting office or reception desk to designated areas in hospital or clinics

Attachment No. 3

Chart 2. HEALTH SERVICES COURSE OUTLINE AND SUGGESTED TIME ALLOCATION

COURSE OUTLINE	TIME ALLOCATION Number of Hours		
	Learning Experiences	Supervised Work Experiences	Total
PART ONE - ORIENTATION TO THE WORLD OF WORK	110		
UNIT I - ADJUSTMENT TO THE WORLD OF WORK			
A - Introduction to Employment	25		
B - Sharing in the World of Work	45		
UNIT II - MANAGEMENT FOR EFFECTIVE LIVING AT HOME AND ON THE JOB			
A - Controlling Resources	10		
B - Achieving Personal and Family Goals	30		
PART TWO - DEVELOPMENT OF COMPETENCIES FOR WORKERS IN HEALTH SERVICES OCCUPATIONS			
UNIT I - JOB SKILLS COMMON TO HEALTH SERVICES OCCUPATIONS	45		110
A - Contributing to Effective Staff Relations	10		
B - Contributing to Mental Health of Patient	15		
C - Promoting Good Relationships With Family Members and Visitors	10		
D - Maintaining Asepsis in Work Areas	15		
E - Maintaining Safety in Work Areas	15		
UNIT II - JOB SKILLS FOR ASSISTING PROFESSIONAL MEDICAL PERSONNEL IN GENERAL PATIENT CARE	150		400
A - Assisting With Routine Personal Care Activities	50		
B - Assisting With Selected Specialized Patient Care Activities	50		
C - Assisting in Specialized Areas of the Hospital	50		
D - Assisting With Emergency Care	50		
E - Assisting With the Personal Care of the Patient at Home	50		
UNIT III - JOB SKILLS FOR ASSISTING PROFESSIONAL MEDICAL PERSONNEL IN THE CARE OF PERSONS WITH SELECTED HANDICAPS	70		170
A - Assisting in the Rehabilitation of Handicapped Patients	35		
B - Providing Sustaining Care for Patients With Selected Handicaps	30		
C - Providing Care for the Elderly	35		
UNIT IV - JOB SKILLS FOR PROVIDING HEALTH CARE-RELATED SERVICES	45		110
A - Maintaining a Healthful Patient Environment	15		
B - Maintaining Medical Supplies and Equipment	20		
C - Assisting With General Routine Activities	15		
D - Meeting Food Needs of Patient	15		
TOTAL COURSE HOURS	590	310	900

Attachment No. 4

BASIC EDUCATIONAL DATA SYSTEM CODES (SECONDARY AND ADULT)*

5912 Health Occupations Core Program (Foundations)

~~5913 Biomedical Equipment Assisting~~ TRADE AND TECH. ED.

** ~~5914 Community Health Assisting~~

5915 Dental Laboratory Assisting (Mechanics)

5916 Dental Assisting (In Office)

5917 Dental Assisting - Advanced (In Office)

5918 Dental Laboratory Assisting (Technician)

~~5919 Environmental Health Assisting~~ AG. ED.

5920 Health Assisting (Health Services, Health Careers)

** 5921 Health Assisting - Advanced (Health Services, Health Careers) } Occupational Cluster-Type Program

** 5922 Home Health Assisting (Adult)

5924 Medical Emergency Assisting (Adult)

** 5926 Medical Emergency Assisting - Refresher

5927 Medical Emergency Assisting - Paramedic

5928 Medical Laboratory Assisting

5929 Medical Laboratory Assisting - Advanced

5930 Medical Office Assisting

5932 Medical Office Assisting - Advanced

** ~~5934 Medical Supply Assisting~~

~~5936 Medical Therapy Assisting~~

** ~~5938 Mental Health Assisting~~

5940 Nurse Assisting

5942 Nursing, Licensed Practical - 1 Year

5944 Nursing, Licensed Practical - 2 Year

5946 Occupational Therapy Assisting

5948 Opthalmic Dispensing

** ~~5950 Pharmaceutical Assisting~~

** ~~5952 Physical Therapy Assisting~~

** ~~5954 Recriational Therapy Assisting~~

** 5956 School Health Assisting

** 5998 Other Health Occupations

* "Assignment Codes for Teacher," Basic Educational Data System, Fall 1978. Alabany, New York: Information Center on Education, New York State Education Department, Page 6.

** Limited employment opportunities in most areas of the State; preparation included in Health Assisting Program.

Attachment No. 5

THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Division of Occupational Education Instruction and Curriculum
Bureau of Health Occupations Education
Albany, New York 12230

HEALTH OCCUPATIONS EDUCATION INFORMATION SERIES NO. 20

GUIDELINES FOR DESIGNING THE LOCAL HEALTH OCCUPATIONS EDUCATION PROGRAM IN HEALTH ASSISTING

The Health Assisting program is designed to prepare youth and adults for work in a CLUSTER of three or more entry level job titles in the health care industry. These job titles share a common core of job skills and related knowledge and in addition, each has selected job skills and knowledge unique to the title and/or the place in which the job is performed. Duties are performed under the supervision of professional nursing, medical and allied health personnel in hospitals, nursing homes, extended care facilities, clinics, laboratories, practitioners' offices, private homes, and in other health care delivery sites.

The Health Assisting program at the secondary level may be designed as a one-year, 400-hour course, for two units of credit, or a two-year, 800-hour sequence, for four units of credit, dependent upon occupational outcomes established by the local district. The one-year, 400-hour course in Nurse Assisting may be used as the first year of a two-year Health Assisting sequence.[1]

At the adult level a Health Assisting program following one of these patterns also is possible. However, short-term courses usually are more effective at the adult level, each combining selected modules to prepare students for a specific job outcome.

The Health Assisting job CLUSTER may be different for each local district or region of the State. Specific job titles chosen are based upon the prevailing health industry labor market needs in the area served by the school district.

OCCUPATIONAL OUTCOMES

Among the job titles toward which training may be directed as part of the local Health Assisting occupational CLUSTER are the following:

- Emergency Medical Technician[1]
  DOT #079.374-010
- Occupational Therapy Aide/
  Rehabilitation Aide
  DOT #355.377-010
- Psychiatric Aide/
  Mental Health Aide
  DOT #355.377-014

1. Program standard and for the minimum 81-hour program and the process for certification of workers are established and administered by the Bureau of Emergency Medical Services, New York State Department of Health.
2. The curriculum for preparation of the Nurse's Aide and Orderly is contained in the syllabus for Health Occupations Education Program: Nurse's Assistant, New York State Education Department, 1974. This one-year course may form the first year of a two-year Health Assisting sequence.

- Ward Clerk
  DOT #245.362-014
- Nurse Aide
  DOT #355.674-014
- Physical Therapy Aide/
  Rehabilitation Aide
  DOT #355.354-010
- Orderly
  DOT #355.674-018
- Central Supply Aide
  DOT #381.687-010

When the local district offers a Joint-State Agency approved adult-level Home Health Assisting[3] program with a process in place for graduates to qualify for adult-level certification, the following job titles also may be included in a secondary-level Health Assisting program:

- Homemaker/Personal Care Services Worker
  DOT #309.354-101
- Home Health Aide (Home Attendant)
  DOT #354.377-014

When employment demands are evident and Business Education programs and personnel are available in the district, a cooperative arrangement between Business Education and Health Occupations Education may permit inclusion of the following:

- Hospital Admitting Clerk
  DOT #205.362-018
- Hospital Insurance Clerk
  DOT #214.362-022
- Medical Records Clerk
  DOT #205.362-018
- Hospital Messenger/Entrance Attendant
  DOT #355.677-014

Under similar conditions, a cooperative arrangement between Home Economics Education and Health Occupations Education may permit inclusion of:

- Dietary Aide/Hospital Food Service Worker
  DOT #355.677-010

Other selected health worker titles may be included in the locally developed occupational CLUSTER if demand is identified in the labor market of the area school, and if training required is short term in nature and does not lead to licensure.

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3. The Home Health Assisting program is a minimum 90-hour adult-level program. The State Departments of Health, Social Services, and Education (Bureaus of Home Economics Education and Health Occupations Education) form the Joint-State Agency Review Team. Inquiries may be directed to the Bureau of Health Occupations Education, New York State Education Department, the unit responsible for coordinating the Joint-State Agency review process.

UNIT SELECTION FOR THE LOCAL PROGRAM DESIGN

The full curriculum for the Statewide program in Health Assisting consists of a series of units each directed toward preparation for one of the health occupations titles listed in the preceding section. No local CLUSTER will include all of these titles. Therefore, only selected units will be used by program planners in designing the local Health Assisting program.

Communications should be established with local employers of health care personnel to identify jobs in demand and specific tasks associated with each of the job titles. Members of the local Health Occupations Education Advisory/ Consultant Committee can be especially helpful to establish and maintain these contacts. The program should be started only if the employment potential is strong for the jobs identified.

Once the decision is made and the written lists of jobs and tasks are agreed upon for the local occupational CLUSTER, only those units in the suggested State curriculum which apply to the locally-established CLUSTER of titles should be chosen to comprise the local Health Assisting curriculum. Some modification of the selected units and modules may be appropriate in relation to identified local competency expectations expressed by employers.

ASSISTANCE IN LOCAL PLANNING

Members of the Bureau of Health Occupations Education are available for assistance in developing the local Health Assisting program.

EHOE: IS#20
December 1979

BUREAU OF HEALTH OCCUPATIONS EDUCATION - NEW YORK STATE EDUCATION DEPARTMENT

PROGRAM STANDARDS FOR SELECTED HEALTH OCCUPATIONS EDUCATION PROGRAMS

HOE PROGRAM	OCCUPATIONAL OBJECTIVES (JOB TITLES) *	PROGRAM APPROVAL WORKER CREDENTIALLING	STATE MINIMUM STANDARDS PROGRAM LENGTH SECONDARY	PROGRAM LENGTH ADULT	CLINICAL EXPERIENCE SECONDARY	CLINICAL EXPERIENCE ADULT	NATIONAL MODEL AGENCIES & STANDARD
DENTAL ASSISTING	Dental Assistant Chairside Assistant Dental Office Receptionist	Approval by SED required No State Agency Credentialling National Certification by examination Certificate by approved local agency	800 Hours 2 Academic Years 2½ Hours per Day 160 Teaching Days	600 Hours Scheduling Varied	250, or approx. 1/3 of 800 Hrs. Based on Competency Achievement	200 of 600 Hrs.	ADA, AAIM One Academic Year, Full-time study 300 Hrs. Clinical recommended; integral component; Based on Competency Achievement
DENTAL LABORATORY TECHNOLOGY	Dental Laboratory Technician Trainee Dental Laboratory Technician Dental Technician Dental Laboratory Assistant	Approval by SED required No State Agency Credentialling National Certification by examination (written, practical, following five years experience)	800 Hours 2 Academic Years 2½ Hours per Day 160 Teaching Days	Same as Secondary; Scheduling Varied	250, or approx. 1/3 of 800 Hrs. Based on Competency Achievement	Same as Secondary	AEA, NADL Two Academic Years, full-time study Practical Experience integral Component; Based on Competency Achievement
HOME HEALTH ASSISTING	Homemaker Personal Care Services Worker Home Health Aide	Joint State-Agency Program Approval Required (NYSED-HEE,HOE; NYSDH, NYSDSS) No State or National Credentialling Certificate by Approved Local Agency	Adult Only	90 Hours	Adult Only	30 of 90 Hrs.	NCHHAS, HIH Minimum of 60 Hrs. Plus Clinical Experience

Attachment No. 6

EOE PROGRAM	OCCUPATIONAL OBJECTIVES (JOB TITLES)	PROGRAM APPROVAL VOCATIONAL CREDENTIALLING	STATE MINIMUM STANDARDS PROGRAM LENGTH SECONDARY	PROGRAM LENGTH ADULT	CLINICAL EXPERIENCE SECONDARY	CLINICAL EXPERIENCE ADULT	NATIONAL AGENCIES & STANDARD
EDICAL SSISTING	Medical Assistant Medical Office Assistant Medical Clerk Central Supply Assistant Medical Receptionist	Approval by SED required No State Agency Credentialling National Certification by examination Certificate by Approved Local Agency	800 Hours 2 Academic Years 2½ Hours per Day 160 Teaching Days	Same as Secondary except scheduling Varied	250, or approx. 1/3 of 800 Hrs. Based on Competency Achievement	Same as Secondary	AMA, AAMA One Academic Year, Full-time study 160 Hours "externship, training integral component
EDICAL ABORATORY SSISTING	Medical Laboratory Assistant Medical Laboratory Aide Medical Laboratory Technician Trainee Clinical Laboratory Trainee Clinical Laboratory Technician Trainee	Approval by SED required No State Agency Credentialling NYC Certificate of Qualification by examination-6 months/ year experience National Certification by examination Certificate by Approved Local Agency	800 Hours 2 Academic Years 2½ Hours per Day 160 Teaching Days	Same as Secondary, Scheduling Varied	250, or approx. 1/3 of 800 Hrs. Based on Competency Achievement	Same as Secondary	AMA, ASCP, NAACLS One Academic Year, Full-time study Experience based on Competency Average, acceptable programs: Theory/Lab Practice - 650 Hrs. Supv. Clin. Experience- 285 Hrs
URSE'S SSISTANT	Nurse's Aide Nurse's Assistant Nursing Assistant Orderly Nursing Home Aide Health Center Aide Hospital Aide	Approval by SED required No State Agency or National Credentialling Certificate by Approved Local Agency	400 Hours 1 Academic Year 2½ Hours per Day 160 Teaching Days	120 Hours	125, or approx. 1/3 of 400 Hrs. Based on Competency Achievement	30 of 120 Hrs.	No National Accreditation or Certification; Some state licence or register

CTOBER 1978; REVISED January 1980

Attachment No. 7

HEGIS CLASSIFICATION OF HIGHER EDUCATION INSTRUCTIONAL PROGRAMS*

Section II. Technologi[illegible] and Occupational Curricula Leading to Associate Degrees and Other Awar[illegible]ow the Baccalaureate

5200 HEALTH SERVICES [illegible]ARAMEDICAL TECHNOLOGIES - Includes those subject field designat[illegible] which characterize students, faculty, facilities, degree and certificate programs, etc. specifically associated with development of skills required for health service related occupations at the semiprofessional level. Two years of preparation beyond high school are usually sufficient for entrance into these occupational fields.

5201 Health Services Assistant Technologies, General
5202 Dental Assistant Technologies
5203 Dental Hygiene Technologies
5204 Dental Laboratory Technologies
5205 Medical or Biological Laboratory Assistant Technologies
5206 Animal Laboratory Assistant Technologies
5207 Radiologic Technologies (X-Ray, etc.)
5208 Nursing, R.N. (less than 4 year program)
5209 Nursing, Practical (L.P.N. - less than 4 year program)
5210 Occupational Therapy Technologies
5211 Surgical Technologies
5212 Optical Technologies (include Ocular Care, Ophthalmic, Optometric Technologies)
5213 Medical Record Technologies
5214 Medical Assistant and Medical Office Assistant Technologies
5215 Inhalation Therapy Technologies
5216 Psychiatric Technologies (include mental health aide programs)
5217 Electro Diagnostic Technologies (include E.K.G., E.E.G., etc.)
5218 Institutional Management Technologies (Rest Home, etc.)
5219 Physical Therapy Technology
5299 Other, Specify

* Inventory of Registered Degree and Certificate Programs in New York State (as of October 1, 1970). Albany, New York; Office of Postsecondary Research, Information Systems and Institutional Aids, New York State Education Department, Page A-13.

DRAFT

ALLIED HEALTH

Attachment No. 8

17.01 Dental Services
- 17.0101 Dental Assisting
- 17.0102 Dental Hygiene
- 17.0103 Dental Laboratory Technology
- 17.0199 Dental Services, Other

17.02 Diagnostic and Treatment Services
- 17.0201 Cardiopulmonary Technology
- 17.0202 Dialysis Technology
- 17.0203 Electrocardiograph Technology
- 17.0204 Electroencephalography Technology
- 17.0205 Emergency Medical Technology - Ambulance
- 17.0206 Emergency Medical Technology - Paramedic
- 17.0207 Medical Radiation Dosimetry
- 17.0208 Nuclear Medical Technology
- 17.0209 Radiography Medical Technology
- 17.0210 Respiratory Therapy Technology
- 17.0211 Surgical Technology
- 17.0212 Ultrasound Technology
- 17.0299 Diagnostic and Treatment Services, Other

17.03 Medical Laboratory Technologies
- 17.0301 Blood Bank Technology
- 17.0302 Chemistry Technology
- 17.0303 Clinical Animal Technology
- 17.0304 Clinical Laboratory Aide
- 17.0305 Clinical Laboratory Assisting
- 17.0306 Cytotechnology
- 17.0307 Hematology Technology
- 17.0308 Histologic Technology
- 17.0309 Medical Laboratory Technology
- 17.0310 Medical Technology
- 17.0311 Microbiology Technology
- 17.0399 Medical Laboratory Technologies, Other

17.04 Mental Health/Human Services
- 17.0401 Alcohol/Drug Abuse Specialty
- 17.0402 Clinical Pastoral Counseling
- 17.0403 Community Health Work
- 17.0404 Genetic Counseling
- 17.0405 Home Health Aide
- 17.0406 Medical Social Work
- 17.0407 Mental Health/Human Services Assisting
- 17.0408 Mental Health/Human Services Technology
- 17.0409 Rehabilitation Counseling
- 17.0410 Therapeutic Child Care Work
- 17.0499 Mental Health/Human Services, Other

17.05 Miscellaneous Health Occupations
- 17.0501 Animal Technology
- 17.0502 Central Supply Technology
- 17.0503 Medical Assisting
- 17.0504 Medical Communications Specialty
- 17.0505 Medical Computer Specialty
- 17.0506 Medical Illustrating
- 17.0507 Medical Library Technology
- 17.0508 Medical Records Technology
- 17.0509 Medical Transcription
- 17.0510 Pharmacy Assisting
- 17.0511 Physician Assisting - Primary Care
- 17.0512 Physician Assisting - Specialty
- 17.0513 Podiatric Assisting
- 17.0514 Veterinarian Assisting
- 17.0515 Ward Clerking
- 17.0599 Miscellaneous Health Occupations, Other

17.06 Nursing-Related Occupations
- 17.0601 Geriatric Aide
- 17.0602 Geriatric Care Work
- 17.0603 Nursing Assisting
- 17.0604 Obstetrical Technology
- 17.0605 Pediatric Aide
- 17.0606 Practical Nursing
- 17.0607 Ward Service Management

17.07 Ophthalmic Occupations
- 17.0701 Ophthalmic Dispensing
- 17.0702 Ophthalmic Laboratory Technology
- 17.0703 Ophthalmic Medical Assisting
- 17.0704 Optometric Assisting
- 17.0705 Optometric Technology
- 17.0706 Orthoptics
- 17.0799 Ophthalmic Occupations, Other

17.08 Rehabilitation Services
- 17.0801 Art Therapy
- 17.0802 Corrective Therapy
- 17.0803 Dance Therapy
- 17.0804 Exercise Physiology
- 17.0805 Manual Arts Therapy
- 17.0806 Music Therapy
- 17.0807 Occupational Therapy Assisting
- 17.0808 Occupational Therapy Aide
- 17.0809 Orthotic/Prosthetic Assisting
- 17.0810 Orthotics/Prosthetics
- 17.0811 Orthopedic Assisting
- 17.0812 Physical Therapy Aide
- 17.0813 Physical Therapy Assisting
- 17.0814 Recreational Therapy
- 17.0815 Respiratory Therapy
- 17.0816 Respiratory Therapy Technology
- 17.0817 Speech/Hearing Therapy Aide
- 17.0818 Speech-Language Pathology/Audiology
- 17.0819 Therapeutic Recreation Aide
- 17.0820 Therapeutic Recreation Assisting
- 17.0821 Therapeutic Recreation Technology
- 17.0899 Rehabilitation Services, Other

17.99 Allied Health, Other

18. HEALTH SCIENCES

18.01 Audiology and Speech Pathology
- 18.0101 Audiology
- 18.0102 Speech Pathology
- 18.0103 Speech Pathology/Audiology
- 18.0199 Audiology and Speech Pathology, Other

18.02 Chiropractic

18.03 Clinical Social Work

18.04 Dentistry

18.05 Emergency/Disaster Science

18.06 Epidemiology

18.07 Health Sciences Administration
- 18.0701 Health Care Administration
- 18.0702 Health Care Planning
- 18.0703 Information and Communication Specialt
- 18.0704 Medical Record Administration
- 18.0799 Health Sciences Administration, Other

18.08 Hematology

18.09 Medical Laboratory Science

18.10 Medicine

18.11 Nursing (R.N.)

18.12 Nutritional-Related Sciences
- 18.1201 Dietetics
- 18.1202 Dietetics/Nutrition
- 18.1203 Nutrition

Attachment No. 9

HEALTH OCCUPATIONS EDUCATION
SECONDARY LEVEL

GRADE 10, 11, 12

HEALTH OCCUPATIONS FOUNDATIONS, ELECTIVE
(½ - 1 YEAR, 200 - 400 HOURS, MAXIMUM 2 UNITS)

GRADE 11, 12

MAJOR SEQUENCE OPTIONS CURRENTLY AVAILABLE
(2 YEARS, MINIMUM OF 800 HOURS, MAXIMUM 4 UNITS)

- DENTAL ASSISTING **
- DENTAL LABORATORY ASSISTING
- HEALTH ASSISTING **
- MEDICAL ASSISTING **
- MEDICAL LABORATORY ASSISTING **
- OPHTHALMIC DISPENSING
- PRACTICAL NURSING (1200 HOURS)*

ELECTIVE COURSE OEFERINGS CURRENTLY AVAILABLE
(½ - 1 YEAR, 200 - 400 HOURS, MAXIMUM 2 UNITS)

- NURSE'S ASSISTING
- SCHOOL HEALTH ASSISTING

** (Under special approved conditions, one-year Electives are possible in Dental Assisting, Health Assisting and Medical Assisting, and Medical Laboratory Assisting)

* Leads to State Licensure through qualifying examinations; must be registered and monitored by the Nursing Education Unit, New York State Education Department.

Attachment No. 10

THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Division of Occupational Education Instruction
Bureau of Health Occupations Education
Albany, New York 12230

HEALTH OCCUPATIONS EDUCATION INFORMATION SERIES NO. 18

SUPERVISED CLINICAL EXPERIENCE - ONE OF THREE ESSENTIAL COMPONENTS OF HEALTH OCCUPATIONS EDUCATION PROGRAMS

With increasing attention to the need for graduates of occupational education programs to exhibit competency in the performance of the tasks required for a particular job, actual directed and well-supervised experiences on the job site take on increased significance. Supervised clinical experience provides opportunity for students to begin the adaptation from the classroom to the actual job situations. Repeatedly health industry employers across the State report that they prefer to hire personnel who have had some supervised job experience. Following orientation to the unique aspects and routines of the particular employment setting, such personnel can be expected to perform their assigned tasks with minimal direction, relate well to fellow employees, accept supervision, and display favorable attitudes toward the job and the employing agency.

THREE COMPONENTS OF THE INSTRUCTIONAL DESIGN

In planning the instructional program it is important to make adequate provision for three major components:

- Theoretical Content is task-oriented; includes major performance objectives, supporting or enabling objectives, and cognitive, affective, and psychomotor information necessary to the development of basic knowledge, skills, and attitudes needed by the health worker.

- Supervised Laboratory Practice provides students with the opportunity to develop skill in performing required tasks based on the knowledge and understanding gained. Students' participation in laboratory activities is invaluable since it enables them to develop skill in performance in a controlled environment which closely simulates the on-job setting under the supervision of a qualified instructor.

- Supervised Clinical Experience provides the student with the opportunity to apply knowledge and/or skills gained in the classroom and laboratory to an on-the-job situation. This aids students in synthesizing their learning. The clinical, or work experience, should be based upon specific objectives since it is an integral part of the total learning process. The teacher determines the type, length, and location for each student's assignment, in cooperation with the student and personnel of affiliating agencies. Cooperative planning between the teacher and the assigned agency supervisor enhances the quality of the experiences provided. Periodic assessment of the student's progress by the student, the teacher, and the assigned supervisor or other designated personnel provides the type of feedback needed for improvement of the student's performance and the program.

STRATEGIES FOR PROVIDING THE SUPERVISED CLINICAL EXPERIENCE COMPONENT

While the traditional mode of supervised clinical experience is preferred in preparing most health care personnel due to the ability to integrate this experience at relevant stages of the program and be assured of qualified supervision, it is recognized that varying circumstances may result in the need for an educational agency to provide approximately equivalent on-job-site supervised experiences in one of several ways.

Perhaps a one-to-one worker-client/employer relationship is necessary where a sufficient number of school supervisors cannot possibly be provided (e.g., for Dental Assistants and Medical Assistants in practitioners' offices or Homemakers/Home Health Aides assigned in individual family homes). Perhaps the number and location of clinical sites is widely scattered, and the number of students who can be accommodated at one time is limited (e.g., Community Health Centers, Medical and Dental Laboratories).

The availability and location of appropriate clinical sites and other resources, transportation, quality of supervision, availability of appropriate insurance coverage, and other factors may prevail and generate a need to consider other avenues to providing approximately equivalent clinical experience.

Cooperative planning with local employers, health professionals, and members of the School's or District's Advisory and Consultant Committees will help to provide the kind of clinical experiences for students which will maintain quality standards for performance and supervision. The particular pattern(s) selected to meet the on-job-clinical experience component requirement for an approvable Health Occupations Education program should become a planned and reported part of the educational agency's program.

Five possible alternate modes for providing supervised clinical experience are described below:

- TRADITIONAL - SUPERVISED CLINICAL EXPERIENCE, INTEGRAL COMPONENT OF SCHOOL-BASED EDUCATIONAL PROGRAM - AT ADULT/POSTSECONDARY LEVELS MAY BE CALLED EXTERNSHIP (UNPAID)

  Planned and directed experiences on-job-site in a health care delivery agency; experiences directly related to skills and knowledge as introduced and practiced in the in-school classroom and laboratory; direct supervision by qualified instructors on school staff in cooperation with the health provider agency's staff; affiliation agreements or contracts between the educational agency and the health care delivery agency; students under liability coverage of the educational agency, or registered as volunteers and under liability coverage of the health care delivery agency; no wages or salary paid students.

- COOPERATIVE EDUCATION - CONCURRENT (SPECIALIZED/DIVERSIFIED) (PAID)

  Planned and directed experiences while employed, during same term(s) as the in-school classroom and laboratory practice components; experiences directly related to in-school components introduced in class, planned cooperatively by supervisor, employer, and student; related instruction component is concurrent in-school component; direct on-job supervision by qualified member(s) of employer's staff, periodic supervision by school-employed Health Occupations Education or Diversified Cooperative Education Coordinator; work agreements negotiated cooperatively by school, student and employer; students as employees, under liability coverage of employers; wages or salary based upon prevailing scales and legal restrictions.

- COOPERATIVE EDUCATION - CAPSTONE (SPECIALIZED/DIVERSIFIED) (PAID)

  Planned and directed experiences while employed, during term(s) immediately upon completion of the in-school classroom and laboratory practice components; experiences apply previously learned skills and knowledge, planned cooperatively by supervisor, employer, and student; related instruction component minimum of one in-school class period per week; direct on-job supervision by qualified member(s) of employer's staff, periodic supervision by school-employed Health Occupations Education or Diversified Cooperative Education Coordinator; work agreements negotiated cooperatively by school, student, and employer; students as employees under liability coverage of employer; wages or salary based upon prevailing scales and legal restrictions.

- INTERNSHIP/TRAINEESHIP (PAID)

  Planned and directed experiences while employed or assigned full-time to the employment site, following completion of in-school classroom theory and laboratory practice in high school diploma, certificate, or degree program; experiences apply previously learned skills and knowledge, planned cooperatively by student and employer, subject to approval of education agency counselor; no in-school related instruction component; direct on-job supervision by qualified member(s) of employer's staff, periodic reports to educational agency counselor; work agreements negotiated by intern/trainee and employer; intern/trainee, as employee, under liability coverage of employer; often with remuneration, wages or salary based upon prevailing scales and legal restrictions, sometimes with a stipend arrangement.

- APPRENTICESHIP - APPRENTICEABLE HEALTH OCCUPATIONS ONLY (PAID) (SPECIALIZED; SELECTED OCCUPATIONS ONLY)

  Planned combination of on-job instruction and related study in State-approved apprenticeable occupations while employed as an apprentice to a qualified, experienced "master" health worker in a health care delivery agency for a minimum of 2000 hours (1 year); initiated and directed by the employer, labor union, or employment service; includes related instruction component (generally theory only) of a minimum of 144 hours per year as planned and offered by an educational agency; direct supervision on-job by the worker to whom apprenticed, no supervision by educational

LABORATORY SIMULATION POSSIBLE SUBSTITUTE FOR ON-JOB SUPERVISED CLINICAL EXPERIENCE IN SELECTED PROGRAMS

For selected programs such as Dental Laboratory Technology and Medical Laboratory Assisting/Technology it may be possible to substitute laboratory simulation experience for actual on-job site supervised clinical experience. Laboratory facilities must be exceptionally well-equipped and industry process controls replicated. Local agencies desiring to pursue this route should contact the Bureau of Health Occupations Education for assistance.

SPECIFIC CONCERNS WHEN PREPARING MEDICAL LABORATORY PERSONNEL FOR EMPLOYMENT IN NEW YORK CITY

A certificate of qualification (commonly called licensure) obtained through examination is required for employment in Medical Laboratories in the City of New York. This is a requirement unique to New York City and is not required Statewide.

Standards are specified in Article 13 of the New York City Health Code, administered by the New York City Department of Health. As a minimum, six months of clinical experience, 1,000 hours in approved laboratories, is required for the applicant to qualify for the examination.

Administrators of Medical Laboratory Assisting/Technology programs operating in New York City schools or those in the Greater Metropolitan Area who prepare persons to work in the City's Medical Laboratories should design their programs to incorporate the standards of this Code. It is particularly desirable that the program, including the supervised clinical experience component, be designed in cooperation with, and be acceptable to, the New York City Department of Health. The clinical experience hours, if recognized/approved by that Agency, can be accumulated toward those required to meet eligibility standards for the New York City certification examination.

To accomplish this, program administrators are encouraged to contact:

New York City Department of Health
Bureau of Laboratories
Division of Laboratory Improvement
455 First Avenue
New York, New York 10016
(212) 340-4461, 62, 63

RELATIONSHIP OF SUPERVISED CLINICAL EXPERIENCE TO FAIR LABOR STANDARDS ACT (FEDERAL) AND MINIMUM WAGE ORDERS (STATE)

The TRADITIONAL plan for providing clinical experience does not involve payment of wages or salary to students obtaining vocational experience. Such experience is arranged by the school's program teacher/coordinator, who accompanies and supervises students during the regular school day. Depending upon the policies of the affiliating agency, such students sometimes are considered in "volunteer" status. Agreements drawn between the educational and health care agencies specify responsibilities of each. In either case minimum wage orders do not apply.

Under all other alternate strategies identified in the previous section which may be used to provide the supervised clinical experience, students are considered employees in "learner" or "apprentice" status and minimum wage orders apply. Application by the employer is necessary if these "employees" are to be employed at less than minimum wage. Information and advice relative to details in each specific case can be obtained by contacting the local District office of the Division of Labor Standards of the New York State Department of Labor and the local area office of the Wage and Hour Division of the United States Department of Labor.

Attachment No. 11

INSTRUCTIONAL COMPONENTS FOR HEALTH OCCUPATIONS EDUCATION PROGRAMS: STATUS OF THE SUPERVISED CLINICAL EXPERIENCE COMPONENT DECEMBER 1979

ABSTRACT OF STUDY

At the request of Assistant Commissioner Gerald L. Freeborne, a status study relative to the Supervised Clinical Experience instructional component was conducted from October to December 1979. The prime purpose was to ascertain the extent to which this component is included in the instructional programs to prepare allied health workers below the baccalaureate level in selected Health Occupations Education programs across New York State as a basis for determining the criticality of this component in instruction. Eight program categories selected for the survey included: Dental Assisting, Dental Laboratory Technology, Health Assisting, Home Health Assisting, Medical Assisting, Medical Laboratory Assisting, Nurse's Assistant, and Practical Nursing.

The study population consisted of all public and private educational agencies, exclusive of schools subject to Private School Law identified as offering programs at secondary, adult, and/or postsecondary levels in one or more of the eight program categories during 1979-80. The telephone interview technique was employed to conduct the survey.

Usable responses were received from 97 percent (103 of 106) of the educational agencies surveyed relating to 299 separate programs in the categories and at the levels included in the study. Nearly 85 percent (253 of 299) of all programs surveyed at all levels and in all program categories were found to include an SCE component.

Dental Assisting. PROVIDES STRONG SUPPORT FOR SCE AS AN ESSENTIAL COMPONENT OF INSTRUCTION. Nearly 80 percent (26 of 33 programs) of surveyed program include SCE for approximately 30 percent of total time. Two of balance are adult supplementary requiring no SCE.

Dental Laboratory Technology. Preference reported for laboratory simulation which must be in well-designed and equipped facilities and under strictly enforced controls. Only 38 percent (3 of 8 programs) reported SCE components, averaging over 50 percent of total time for this purpose. One fourth of the programs (2 of 8) are reported to be adult supplementary requiring no SCE.

Health Assisting. STRONG SUPPORT FOR SCE AS AN INTEGRAL COMPONENT OF THE CURRICULUM IS PROVIDED AS OVER 90 PERCENT OF SURVEYED PROGRAMS ARE REPORTED TO INCLUDE THIS COMPONENT, AVERAGING 36 PERCENT OF TOTAL INSTRUCTIONAL TIME. Programs are reported at secondary and adult levels only.

Home Health Assisting. JOINT-STATE AGENCY APPROVAL IS REQUIRED FOR ADULT-LEVEL ONLY OPERATION, AND A MINIMUM OF 30 HOURS OF SCE AN ESSENTIAL COMPONENT FOR APPROVAL. Sixty-seven (67) percent of programs are found to include SCE averaging 37 percent of total time. Balance of programs operate under various approved experimental and special arrangements.

Medical Assisting. QUITE STRONG SUPPORT FOR SCE INSTRUCTIONAL COMPONENT WITH NEARLY THREE-QUARTERS OF PROGRAMS (19 of 26) EVIDENCING SCE COMPONENTS. Average use of total instructional hours over 20 percent is four (4) of balance are adult supplementary programs requiring no SCE.

Medical Laboratory Assisting/Technology. SCE STRONGLY SUPPORTED BY REPORTED INCLUSION IN OVER THREE-QUARTERS (33 of 44) OF SURVEYED PROGRAMS. An average of 36 percent of total time is assigned to SCE. Three of remaining programs are adult supplementary, with no SCE necessary.

Nurse's Assistant. SCE REPORTED TO BE A COMPONENT OF OVER 90 PERCENT OF PROGRAMS (43 of 47). An average of 40 percent of total time is used. STRONG SUPPORT FOR THIS AS AN ESSENTIAL INSTRUCTIONAL COMPONENT IS EVIDENCED.

Practical Nursing. SCE IS A COMPONENT OF 100 PERCENT OF PROGRAMS SURVEYED AND IS A REQUIREMENT FOR PROGRAM REGISTRATION UNDER COMMISSIONER'S REGULATIONS. Use of an average of approximately 50 percent of total instructional time is evidenced.

Table 12 Instructional Contact Hours Reported By All Educational Agencies for all Types of Programs (Two Year, One Year or Less - Preparatory or Supplementary) with Supervised Clinical Experience Components at Secondary, Adult, and Postsecondary Levels, by Health Occupations Education Program Category

Program Category		Agencies Reporting (No.)	Programs Reported (No.)	Instructional Contact Hours		Programs with SCE Component			Instructional Contact Hours				
									Total Program		SCE Component		
				Range	Average	Agencies Reporting (No.)	Programs Reported (No.)	Percent of Total	Range	Average	Range	Average	Percent of Total
DENTAL ASSISTING	1yr.	11	16	60-1020	426.4	9	10	62.5	135-1020	585.1	45-340	194.6	33.3
	2yr.	16	17	532-1230	957.8	15	16	94.1	532-1230	957.6	40-540	255.6	26.7
DENTAL LABORATORY TECHNOLOGY	1yr.	2	3	120-450	250.0	1	1	33.3	450	450.0	30	30.0	6.7
	2yr.	5	5	900-1880	1255.6	2	2	40.0	1170-1880	1525.0	225-1440	832.5	54.6
HEALTH ASSISTING*	1yr.	17	18	133-570	318.3	17	15	83.3	171-570	444.5	50-384	168.1	37.8
	2yr.	17	17	800-1110	933.1	17	17	100.0	800-1110	933.1	80-759	332.3	35.6
HOME HEALTH** ASSISTING	1yr.	25	27	60-280	96.9	18	18	66.7	90-280	110.1	22-200	40.3	36.6
	2yr.	0	0	-	-	0	0	-	-	-	-	-	-
MEDICAL ASSISTING	1yr.	12	13	90-931	449.1	7	8	61.5	266-931	558.9	45-480	209.6	36.6
	2yr.	13	13	503-1710	947.5	11	11	84.6	503-1710	929.8	30-300	149.0	16.0
MEDICAL LABORATORY ASSISTING	1yr.	10	12	120-540	763.1	5	7	58.3	540-1461	1055.9	36-576	386.9	36.6
	2yr.	31	32	610-4230*	1470.9	25	26	81.3	610-2640	1434.6	-1536	493.8	34.4
NURSE'S ASSISTANT	1yr.	37	42	75-600	355.1	36	42	92.9	90-750	320.8	12-600	140.2	43.7
	2yr.	5	5	653-1000	866.9	4	4	80.0	653-1000	765.6	195-378	252.9	33.0
PRACTICAL NURSING ***	1yr.	37	38	325-1645	1024.9	37	38	100.0	325-1645	1024.3	98-1200	503.9	51.3
	2yr.	37	41	900-2094	1078.5	37	41	100.0	900-2094	1078.5	200-1002	509.3	47.2

* All Secondary Level

** Program requires Joint-State Agency Approval - Lack of SCE Component due to inclusion in Secondary level program, under special approved circumstances at the adult level.

*** Program leads to NYS Licensure. Program must be registered as per Commissioner's Regulations for Postsecondary Education.

Bureau of Health Occupations Education
99 Washington Avenue

June 1, 1980

New York State Education Department
Albany, New York 12230

HEALTH OCCUPATIONS EDUCATION ENROLLMENT BY PROGRAM AREAS, SECONDARY (S) AND ADULT (A) LEVELS 1969-1980
(Including Major Cities, BOCES, and LEAs)

HOE PROGRAM		1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	**** 1979-80
DA	- S	442	494	638	833	1007	802	767	1453	1205	899	
	- A		308	188	398	489	890	761	771	775	575	
DTA	- S	163	107	239	276	304	341	142	303	134	159	
	- A	55	106	24	50	72	86	132	-	75	61	
HA	- S	-	117	467	472	429	89	290	321	5125	3052	
	- A	-	76	60	222	252	27	294	-	375	30	
HHA	- S	* -	68	40	26	42	61	264	199	87	326	
	- A	** -	-	204	-	-	-	-	575	750	1124	
MA	- S	-	284	669	911	940	655	854	428	963	800	
	- A	-	808	175	306	485	456	606	431	425	795	
MTA	- S	580	5	48	658	683	738	836	907	1925	1052	
	- A	598	758	716	967	1228	490	487	278	225	173	
NA	- S	4476	1097	2840	3261	3446	2297	3115	3009	1987	2215	
	- A	646	768	846	1129	928	926	1048	1434	1475	900	
PH	- S	2494	3212	4922	4646	4766	4742	4493	3655	4069	3191	
	- A	726	1902	1659	2237	1397	2508	2658	2202	2250	1576	
OTHER	- S	1172	2913	1925	1904	1719	2401	1110	2456	2491	469	
	- A	-	1994	794	1047	1077	1262	1409	1472	625	1476	
TOTAL	- S	9327	8297	11,798	12,627	13,334	12,126	11,931	13,401	18,028	12,253	
	- A	2025	9222	4744	6446	5415	7350	7395	7120	7075	6773	
GR. TOTAL		11,352	17,519	16,542	19,073	18,749	19,476	19,326	20,521	25,103	19,026	

* Some Health Assisting-type Programs also are reported under "Other"

** Home Health Assisting theory and in-school laboratory practice may be approved as part of a secondary-level Health Assisting program, if an adult-level Home Health Assisting program is approved for the district

*** Joint-State Agency (JSA) approved adult-level programs (State agencies include Departments of Health, Social Services, and Education - Bureaus of Home Economics Education and Health Occupations Education; Review and response process coordinated by Bureau of Health Occupations Education)

**** 1979-80 statistics currently being analyzed.

EMPLOYMENT OF HEALTH OCCUPATIONS EDUCATION GRADUATES, COMPLETING DURING 1977-78

SECONDARY AND ADULT LEVELS IN MAJOR CITY, BOCES, LEA PROGRAMS *

STATUS OF COMPLETERS	SECONDARY				ADULT				TOTAL			
	Total	BOCES	LEAs	MajCit	Total	BOCES	LEAs	MajCit	Total	BOCES	LEAs	MajCit
Total Completers	6206	2768	260	3178	3773	2989	660	124	9979	5757	920	3302
Employed	3536	1623	123	1790	1876	1473	301	102	5412	3096	424	1892
Related Occupation	2393	1116	74	1203	1348	1053	202	93	3741	2169	276	1296
Slightly Related	335	139	25	171	157	92	65	0	492	231	90	171
Unrelated Field	704	325	15	364	331	288	34	9	1035	613	49	372
Military	104	43	9	52	40	40	0	0	144	83	9	52
Unemployed	2200	918	118	1134	783	620	151	12	2983	1568	269	1146
Seeking Employment	448	204	10	234	570	495	71	4	1018	699	81	238
Additional Education	1440	602	95	743	149	75	66	8	1589	677	161	751
Other	312	142	13	157	64	50	14	0	376	192	27	157
Unknown	470	197	19	254	1114	896	208	10	1584	1093	227	264

*Data provided by Division of Occupational Education Planning, Research, and Evaluation, based on Follow-up Survey Reports from Districts.

THE UNIVERSITY OF THE STATE OF NEW YORK
The State Education Department
Division of Occupational Education Instruction
Bureau of Health Occupations Education
Albany, New York 12230

CHARACTERISTICS OF NEW YORK STATE HEALTH OCCUPATIONS EDUCATION TEACHERS, 1970-80*

Source: Information Center on Education, Public School Professional Personnel Report(s). 1971-72, 1972-73; 1973-74; 1974-75; 1975-76; 1976-77; 1977-78; 1978-79;1979-80*** Albany, New York, The State Education Department, July 1972, July 1973, July 1974, May 1975, June 1976, June 1977, June 1978, June 1979, June 1980***.

CHARACTERISTIC	YEARS									
	70-71**	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80
Number of HOE Teachers, Statewide										
Classroom Staff	198	454	501	562	572	579	557	543	537	531
Nonclassroom	-	-	121	115	93	113	89	55	38	59
Sex of HOE Teachers, Statewide, Percentage - HOE Classroom Personnel Only										
Male	-	6.1%	5.8%	9.2%	7.5%	8.5%	6.6%	5.8%	6.8%	8.2%
Female	-	93.9%	94.2%	90.8%	92.5%	91.5%	93.4%	94.2%	93.2%	91.8%
Education Level - Degree Status, Statewide, Percentage - HOE Classroom Personnel Only										
Less than Bachelor's Degree	50.5%	30.1%	32.3%	32.8%	34.6%	32.6%	30.2%	27.0%	24.9%	22.7%
Bachelor's Degree	38.8%	32.6%	33.4%	28.4%	28.3%	27.4%	26.8%	29.2%	27.3%	27.7%
Bach + 30 or more Hours	6.6%	10.3%	11.5%	10.8%	10.4%	11.3%	11.2%	9.2%	13.4%	13.3%
Master's Degree	2.5%	13.2%	10.9%	14.0%	14.3%	15.2%	16.0%	17.1%	17.5%	18.8%
Master's + 30 or More Hours	8.1%	13.6%	11.5%	13.6%	11.7%	13.2%	15.4%	17.5%	16.8%	17.5%
Doctorate	-	0.2%	0.5%	0.4%	0.7%	0.3%	0.4%	-	0.2%	-

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* Annual Basic Educational Data System (BEDS) Collection, October of each year.

** Based upon total number of teachers determined to be assigned to HOE classes during first full year HOE identified as separate professional field, but not yet listed separately on BEDS data collection instrument.

*** Incomplete for 1979-80; based upon preliminary analysis for June 1980 publication.

CHARACTERISTICS OF NDE TEACHERS

CHARACTERISTIC	YEARS 70-71**	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80
Certification Status, Statewide, Percentage - NDE Classroom Personnel Only										
None	36.9%	27.8%	25.1%	21.2%	18.0%	14.4%	12.1%	7.4%	6.3%	4.8%
New York City										
Sub	-	3.7%	2.7%	1.3%	1.8%	0.4%	0.2%	-	0.6%	1.9%
Prob	11.1%	7.2%	7.2%	5.0%	7.3%	5.1%	2.5%	1.7%	3.6%	5.4%
Buffalo										
Temp	-	0.9%	0.5%	-	0.2%	0.5%	-	.4%	0.6%	-
Prob	0.5%	0.7%	0.9%	0.6%	0.6%	0.2%	-	-	0.2%	-
5 Year Prov	11.1%	6.7%	7.7%	13.2%	11.0%	9.4%	7.7%	6.8%	4.8%	4.4
10 Year Prov	5.5%	5.1%	3.6%	2.4%	1.7%	1.2%	0.8%	-	0.8%	-
Permanent or Life	40.4%	47.9%	52.3%	56.3%	59.4%	68.8%	76.7%	83.7%	83.2%	83.5%
Years of Educational Experience, Statewide, Percentile - NDE Classroom Personnel Only										
25th Percentile	-	3	4	4	4	4	6	7	6	***
50th Percentile	-	6	7	7	7	8	9	10	9	***
75th Percentile	-	12	12	12	12	13	14	15	13	***
Age Distribution, Statewide, Percentage - NDE Classroom Personnel Only										
18-25	-	4.3%	4.7%	2.9%	5.2%	2.1%	1.3%	0.8%	1.1%	1.5%
26-32	-	10.6%	12.4%	13.1%	12.0%	12.7%	11.4%	9.8%	9.4%	7.0%
33-40	-	16.2%	18.8%	19.4%	20.5%	18.3%	19.2%	19.6%	18.4%	18.1%
41-48	-	34.0%	30.5%	27.4%	27.2%	26.8%	27.1%	27.3%	26.9%	25.3%
49-56	-	23.9%	23.7%	25.9%	25.5%	29.3%	30.2%	31.9%	31.6%	34.6%
57-64	-	9.2%	8.6%	10.2%	9.1%	9.7%	10.1%	9.8%	12.4%	13.3%
65 or more	-	1.8%	1.2%	1.1%	0.5%	1.1%	0.7%	0.8%	0.2%	0.2%
Salary - Percentiles - NDE Classroom Personnel										
25th	-	-	$10,200.	11,000.	11,850.	13,145.	14,002.	14,861	15,326.	***
50th	-	-	12,316.	13,800.	14,754.	16,593.	17,150.	17,918.	18,500.	***
75th	-	-	15,100.	16,950.	17,737.	19,029.	20,229.	20,350.	21,100.	***

THE PREAPRATION AND ROLE OF THE LPN

Mary Chicola
St. Francis Hospital - Olean, New York

Being an effective health care manager today, is one of the most difficult and demanding challenges there is. The most important responsibility of my position is to assure that safe and therapeutically effective patient care is provided by nursing services. We are dealing with human lives in the hospital and the hazards are very real and errors often incapable of correction.

When patients are admitted to the hospital for care, they need nursing personnel caring for them not only with their hearts, but with their heads. The patient needs to know that the nurse can handle the complex equipment if he/she stops breathing. More importantly the patient needs to feel confident that the nurse will administer the right medication in the proper amount and will be able to detect any undesirable reaction the patient may have to the medication.

If we all agree that the patient is entitled to Quality Care in the hospital and if we are truly concerned about developing the best candidate for the health services occupations--the place to begin is with a realistic awareness of existing strengths and weaknesses.

It is apparent that the high school guidance teachers are doing more than an adequate job in pre admission counseling techniques they use. Those students enrolled in the LPN program desiring an eventual RN or BSN are encouraged to delay enrolling in the program until their senior year, and encouraged to spend one post graduate year finishing the program. This allows students to get the additional math and science

courses necessary for the more advanced degrees. Economic consideration (family must pay last year if post graduate) can work against this advice however.

As employers we have been satisfied with the graduates of the BOCES programs. However the transition from student to employee is traumatic, and a cause for concern. Once the student leaves the security of the classroom, they find the realities of the working world are not at all what they had expected.

They are not prepared for working in a fast paced acute care situation, because of their lack of clinical experience. Like the typical high school student that they are--they are accustomed to the whole world revolving around their needs. They have not developed a sense of personal responsibility because they have never had to. Parents are most cooperative in making decisions for them. If they do not like their assignments, they tend to get mad and pout. They have never learned that feelings of anger must be submerged for the good fo the team. They expect to work 7-3, no weekends, no rotation of shifts, and definitely no holidays.

In light of declining enrollments in the schools, there is fierce competition for funds at both state and federal levels, and I have concerns for the future of Health Services Programs in our area if we continue to duplicate them.

In our small community with two hospitals, BOCES offers a nurses aide program for high school students as well as adults. One hospital has their own program. Community College offers a three credit course "Knowledge Skills for nurse's Aides." Homemaker Serivces offers a 64

hour State certified course. BOCES offers the LPN program to students, and one of the hospitals offers the course.

It is simply impossible to continue delviering health care services in the 1980's on the assumption that little has changed since 1970. We all know better. It in the name of cost containment, hospitals are forced to offer less care to fewer people in a smaller number of facilities, then fewer hospital workers will be needed. On the other hand the population is growing older, and if National Health Insurance becomes a realtiy--it will increase access to health care and the use of hospital beds will increase, and more staff will be required.

Health Care Teams providing care to the patient in the home has already become a reality in our area with the LPN as team leader. These are the same students that you are preparing--and you must ask yourself if you are comfortable with them as team leaders, without any leadership preparation.

Over a period of years I have seen the licensed practical nurses role change dramatically not only in terms of job functions, but in education as well. If you are going to reshape nursing curriculums you will need to include theory and practice related to nursing care of the ill plus nursing practice directed toward health maintenance.

You need to teach relaxation and stress reducing techniques if the student is going to be able to cope with change.

You need to place the teachers and the students where the action is, where the conditioning is. The sights, sounds, smells, and feel of hospital machinery in action has an incalcuable educational value.

You need to remember that Nursing is a service oriented occupation and you should increase the amount of clinical experience students receive.

You need to continue to do what you do best--prepare the kind of student who can give the best kind of patient care.

COMPETENCIES NEEDED FOR A HEALTH TEAM MEMBER WITH A SECONDARY SCHOOL EDUCATION

Joan Borden

St. Johnland Home, Kingspark, New York

The necessary competencies of the nurse's aide have been undergoing slow changes in the past ten years. I feel these competencies must undergo drastic changes in the next ten to twenty years.

Advanced technology has created new situations or intensified existing situations in the health care field.

1. The well aged facing situations created by the normal aging of the human organism.
2. Chronic long-term illness where the patient requires assistance in activities of daily living but is not acutely ill.
3. The need for home care of subacute illness due to the upward spiraling cost of hospital care.
4. The prolongation of life of the incurable ill through life support systems.

I will address these situations as to the competencies necessary in the health occupant program graduate.

The number of older Americans is increasingly daily. The majority of these Americans continue to function at home with normal care. The nurses' aide will be called upon to assist these elderly when an illness occurs, or a change in an existing condition such as diabetes, hypertension, parkinsons, that does not require hospitalization, but does require assistance by trained personnel. In this situation the financial

cost for the care of the patient can be lessened by utilizing the skills of a well-trained nurse's aide with minimal supervision of a professional nurse.

The aide should be well grounded in the physiological and psychological process of normal aging. Only through knowledge of "normal aging process" can the aide recognize the "abnormal" or diseased process. The aide's curriculum should have explored and exploited the many myths of aging so that the aide comes to the situation free of false assumptions of the aging process.

The normal sensory losses incurred by the aged should be well known by the aide. Visual and auditory deprivation as well as loss of tactile sensations and taste will affect the person's personality as well as their response to illness. The knowledge will enable the aide to assist the patient in coping with the current medical problem.

The aide should have the ability and training to observe for the progression or regression of the current illness within a limited sphere. I feel competencies can be developed in the aide to assist the patient to observe for these changes. Under the supervision of professional personnel, I feel the aide should have the competency to teach the patient simple skills for monitoring their illness - i.e. S/A for diabetes.

In learning the normal psychological process of aging, the aide will recognize the needs of the elderly or any ill individual for love, warmth and attention. Humal relations technique is a must in training the competent aide.

The person on the road to recovery from a flare-up of a chronic illness must be "weaned" away from the ministrations of the aide. The aide must be able to assist the patient to do this. Motivating the patient is another skill for which the health occupation program must be geared.

The other side of the "chronic illness" coin is recovering from an acute incident, i.e. fractured hip, either in a home situation or health care facility, particularly a nursing home setting. The need for a qualified nurse's aide in a nursing home is tremendous at this point in time and accelerating yearly.

The aide should be trained in simple rehabilitation skills such as passive range of motion, exercising, positioning, and ambulation of a person who is using a walker, cane or crutch. Although the actual training for these rehabilitative tools will be done by a technical person, the nurse's aide should be able to recognize the incorrect use of these implements from the correct use.

The aide's attitude toward the patient's rehabilitation will greatly influence that patient's progress. Nurse's aide curriculum should devote time and resource people for exploration of the aide's attitude toward rehabilitation not only in the elderly, but toward anyone experiencing a devastating disability where only a minimal success rate is possilbe.

The aide should be taught (if this can be taught) to have a positive outlook toward rehabilitation and to be able to project this outlook daily in interpersonal relationship with the patient.

Family relationships are understandably strained when a person is ill. Although the aide may be the person most with the family it must be the professional who communicates the medical progress of the patient. Communication skills must be taught to the aide in order that the professional be kept aware of the family's needs and desires. The aide's skill in maintaining a warm, friendly relationship with the family without becomming "bossy" and/or garrulous is a definite competency needed. Most employers in health facilities would frown on an aide spelling out diagnosis, treatment, etc. to the family.

In the area of communication, the aide must be aware of the fact that non-verbal communication is most often used by both the patiend and the health personnel. A gesture, a touch, a look, a set to the mouth or shoulders--all say far more than words. Aides should be made aware of this and given the time to practice this skill with their peers.

Ignoring a patient's personhood is one of the reasons aides are dismissed from a health care facility. The technical skills are excellent but the patients are handled as if they are wooden logs. I do not mean to imply abuse of any degree but with a robot-like efficiency. Again human relations and perhaps self-awareness classes would be helpful in overcoming this deficiency.

Sexual education is needed for health workers on all levels. The nurse's aide spends the greater portion of time with the patient and has a true need for this competency. Masturbation, homosexuality, and sexual needs of the elderly as well as sexual needs of patients with a myriad of illnesses should be subjects addressed by the faculty of health care personnel.

Prolonging the lifespan of the incurably ill through life-support systems may be the "achievement of the decade" but it presents awesome problems for the health care providers.

The nurse's aides, on their level, must be counseled on death and dying. They must first reconcile themselves as to their own mortality and feel comfortable with that eventuality. I truly feel it takes a special person to work with the incurable ill and health care personnel on all levels should be chosen with this in mind. The aide should know the various rationales for the life support system being maintained and their role in the circle of support surrounding the dying person. The aide must also know how and when to contact a mentor should a situation areise where removal from the "circle" is imperative for the aide's physical and/or emotional well being.

The competencies discussed are, of course, in addition to the basic skills already being taught in our health occupation system. The myriad of skills include:

1. Needs of personal hygiene--bathing, toileting, dressing, personal grooming (nails, hair).
2. Nutrition, feeding--perhaps simple meal planning.
3. Monitoring of vital functions--intake/output, S/A stool for occult blood, temperature, pulse, respiration, blood pressure.
4. Bodily funcitons--anema, douches, care of ostomies and foley catheters under direct supervision of a professional.

5. Care of the environment, bed-making, maintenance of appliances, etc.
6. Basic O_2 theraby
7. Fire safety
8. Principles of infection control

A competent nurse's aide is truly a vital member of the health team. The competencies necessary are many and varied but a nurse aide who is motivated to achieve these competencies will find the rewards of caring for the sick and elderly many and varied.

Equally those health professionals involved in teaching these competencies will find this role fascinating.

THE KINDS OF COMPETENCIES DENTAL ASSISTANTS WILL NEED IN 1990 AND BEYOND

Myra Gordon
State University of New York at Buffalo

The ideas expressed in this paper will relate primarily to the training of aspiring dental assistants, but there are certain aspects of the presentation that will be applicable to the training of other entry level support personnel. Before I present the ideas to which I allude, some introductory comments seem appropriate.

To begin, I am a new-comer to the field of dentistry. I am a clinical-psychologist by training and approximately a year or so ago, I was seeking a job in an applied area of psychology. At this time, I interviewed for a position with the federally funded Team Program at the State University of New York at Buffalo School of Dentistry. Team is an acronym for training in expanded function auxiliary management and the purpose of the Dental Team Practice program is "to demonstrate to and educate dental students in the organization and management of a multiple auxiliary dental team practice as a means of increasing the efficiency and the productivity of the current dental delivery system (Heiv, 1979)."

The U. B. Team program was looking for a person either in psychology or management to be their full-time management instructor. This person was to be their Curriculum Director and have primary responsibility for using all phases of the program--workshops, didactics, and a clinic--to teach junior and senior dental students management and a team approach to the delivery of dental care services. This person was also to have the primary responsibility for the management of and in-service

training of a group of auxiliary personnel consisting of five certified dental assistants, five licensed expanded function duty hygienists, and one receptionist.

Well, to make a long story short, I was offered this position with the Team program and I accepted it. For the last fourteen months, I have been totally immersed in the field of dental practice management and what it means today to be a dental student, to be a practicing dentist, to be a dental auxiliary, to be a dental patient, and what it means to practice dentistry. I have talked quite literally to hundreds of dental students and to many practicing dentists, dental auxiliaries and dental patients. I have perused year after year of several dental journals looking for and reviewing articles relevant to the nature of dentistry, dental practice management, and the occupational hazards facing dentists and dental auxiliaries. At this point, I am convinced that there is a definite tact to be taken in the training of new dental manpower and in the re-training of existing personnel. In the remainder of this paper, I will present a particular theoretical framework for viewing both basic competencies and some of the newer competencies that will be needed by dental assistants in the next several decades. Then, I will go into more depth about the particular parts of this framework and the competencies to which it leads. In the final section of the paper, I will extract those aspects of the presentation that are applicable to the training of other types of entry level personnel.

A good way to introduce the theoretical framework we endorse at the University of Buffalo Team program is with a cartoonist's perceptive commentary on one day in the life of Dr. X, the dentist. In frame one, Dr. X is shown poised to work on a very threatening-looking convict type of guy. With a smile, Dr. X says, "Certainly, by all means let me

know if you feel any pain." In frame two, Dr. X listens and smiles as his auxiliary tells him, "Those supplies you needed immediately have been back-ordered till next month." In frame three, Dr. X is shown bending over, tearing and smiling as he works on a patient out of whom is belching this odiferous mixture of fish, onions, and garlic. In frame four, Dr. X bandages his finger, smiles and tells the mother of baby Johnnie, "And let's just keep him home until he's over this biting habit." At the end of the day, Dr. X is shown driving home to the honk, screech and blatt of rush hour traffic, but the smile remains rivoted to his face. As he drives up, Dr. X's son sees him through the window and exclaims with joy, "Mom! Mom! Daddy's home!" The little boy rushes to the door to say "Hi Daddy," at which point Dr. X explodes in one gigantic "GROWL".

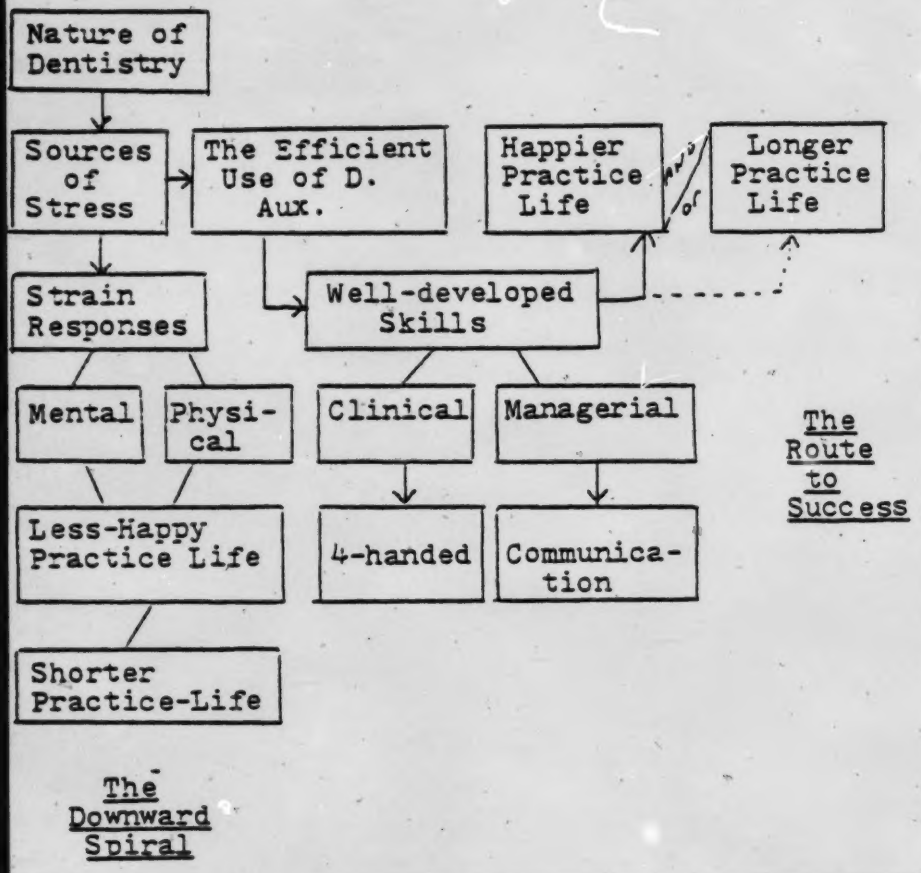
There are three basic premises underlying the theoretical framework we follow at the U. B. Team Program. The first is that being a dentist is stressful (American Dental Association, 1977; Blatt, 1975; Dyce, 1977; Forrest, 1978; Gehrman, 1977; Gutwirth, 1966; Howard, et al., 1976; Klein, 1978). The model of the traditional dentist practicing in the solo mode has certain predictable sources of stress associated with it, and if these practice stressors are not effectively managed, predictable types of strain responses, some of which are quite severe, are very likely to occur (Austin & Kruger, 1947; Barnes, 1974; Bernstein & Baulk, 1953; Biller, 1946; Blachley, Osterud & Josslin, 1963; Fawchard Academy Poll, 1965). The second premise is that the efficient use of dental auxiliaries is the key to the mediation of most dental practice stressors (Arnold, 1969; Davis, et al., 1963; Green, 1975; Kimmel, 1973; Nixon, 1971). In an office where highly trained dental auxiliaries are utilized effectively to deliver dental care in

a team approach to treatment, the practice of dentistry can be a happy, an efficient, and a productive enterprise. The third premise is that the efficient use of auxiliaries demands a high degree of skill-attainment in both clinical and managerial areas by both the dentist and the auxiliaries which he or she will employ. The simple addition to the office setting of "girls" who do scut-work does not work. In fact, the addition of people to an office staff who are not well trained and whom the dentist does not know how to train or to manage results in the addition of yet another practice-stressor (Foley, 1977; Kimmel, 1973).

When taken together, these premises lead us to an emphasis on stress-reduction and to the following theoretical framework for viewing the efficient use of dental auxiliaries.

S.U.N.Y.A.B. Team Framework for Viewing the Efficient Use of Dental Auxiliaries

	Competencies	
	Clinical	Managerial



See Table 4

See Table 5

With the basic framework thus outlined, we can proceed now to a more detailed look at each component. These considerations will lead to the specification of competencies, both clinical and managerial, that will be required of future dental assistants. We will begin with the nature of dentistry.

In an article discussing the problem of fatigue in dentistry, C. W. Cloutman (1963) has presented an apt portrait of the practicing dentist. He says:

> If a classification of occupations were attempted having regard to such features as physical exertion, endurance, manual precision, initiative, imagination, responsibility for things of material value, responsibility for persons, and evolution during the career and with advancing age towards delegation to juniors with supervision, dentistry seems to stand almost by itself. It is characterized by the requirements of sustained concentration of eyes and hands, of working long hours in the same location with little general muscular activity and few peaks of physical effort. Work is as often as not carried out upon patients who are either unappreciative, uncooperative, apprehensive or even fearful. The operator's working posture is frequently bad and the arrangement and accessibility of his equipment are far from ideal. The quality and efficiency of his assistant in the surgery may leave much to be desired. His career plan is 'flat'; that is to say, he looks forward to no radical change during his working life...he is to some degree aware that the completion of the work in hand within a certain time is immediately related to material reward.

More recently, Cooper and Christen (1978) have offered their profile of the dentist at work. Their characterization points out that many of the stressors that impinged in 1963 are alive and well some fifteen years later. They write:

> At work, dentists have a relatively "tight" role structure. Capital investment and the reputation of the dentist encourage physical immobility to a fixed office location. The sit-down dentist is immobilized and must pay exact attention to detail, orderliness, and cleanliness. The work is physically hard in a restricted oral workfield, and is mentally taxing. Postural defects, eye strain, back troubles, muscular spasms, circulatory disorders, and fatigue are common. Patients are seen in a highly structured setting and are processed in clockwork fashion. There is the everpresent and constant pressure of decision-making and of counseling and assuaging patients. Appointment schedules are closely adhered to with the dentist performing in a very small physical space... The dentist's relationship to others is somewhat complex. He must perform a variety of roles: businessman, humanist, technician, professional, and teacher. He frequently feels a lack of patient appreciation... (An) identity crisis is sure to surface in mid-life and frequently leads to various forms of (mal)adaptive behavior such as escape to drugs or alcohol, family problems, suicide, or stress.

These are just two articles in a large literature that describe sources of stress on dentistry. Table 2 summarizes the major sources of stress associated with the traditional practice of dentistry, and Table 3 summarizes the common manifestations of strain.

Table 2. The Sources of Stress Associated with the Traditional Practice of Dentistry

1. The physical exertion required.
2. The demand for precision workmanship.
3. Responsibility for human and material resources.
4. Responsibility for the quality of work performed and driving oneself to do perfect work.
5. Working long hours in the same location; physical confinement.
6. Patients: unappreciative, uncooperative, fearful, apprehensive; the necessity to counsel, to persuade, and to assuage them; the necessity to inflict pain at times in order to help; the necessity at times to compromise treatment plans due to patient concerns; the demand-characteristic that the dentist always appear positive, calm, and patient.
7. The physical work posture and sustained concentration of eyes and hands.
8. Restricted workfield with poor visibility and accessibility.
9. Flat career plan and tight role structure.
10. Time is money dynamic leading to time pressure problems.
11. The high cost of running a practice and/or an increased demand for services leading to the need to be productive.
12. Inadequate auxiliary personnel.
13. Inadequate arrangement and accessibility of equipment.
14. Professional isolation.
15. Generally negative public attitudes towards dentistry.
16. Managing auxiliary personnel and the office.

Table 3. Common Manisfestations of Strain in Dentistry

Mental	Physical
1. Emotional "burn-out": feeling tired/low energy.	1. Cardiovascular disturbances: decreases in venous circulation in the legs leading to varicose veins; vascular tumors of the rectal mucosa - hemorrhoids
2. Feel tense, uptight, fidgety	2. Neuromuscular disturbances: chronic inflammation of lumbo-sacral regions; postural defects; foot problems; muscular strain in arms, neck and head, back, and legs; muscular spasms
3. Feel depressed or remorseful	3. Gastrointestinal disturbances: duodenal ulcers; gall bladder disease; upset stomach
4. Eat too much	4. Ocular disturbances: eye fatigue and strain; earlier onset of presbyopia; astigmatism
5. Loss of appetite	5. Dermatological disturbances: generally contact dermatitis, often caused by the improper or careless manipulation of materials
6. Smoke more than usual	6. General fatigue: headaches; sweaty/trembling hands; shortness of breath and sighing
7. Have difficulty going to sleep or staying asleep	
8. Feel restless or unable to concentrate	
9. Have decreased interest in sex	
10. Have increased interest in sex	
11. Feel irritable	
12. Misdirected anger	
13. Become less communicative	
14. Feel disoriented or overwhelmed	
15. Difficulty getting up in the morning	
16. Procrastination	
17. Family problems	
18. Low self-esteem	
19. Drug and/or alcohol abuse	
20. Suicidal ideation	

At the point where stress begins to manifest itself in one or more strain responses, the practicing dentist will find that s/he will have entered a downward spiral from which it will become increasingly difficult to extricate himself or herself. Whether this downward spiral leads to actual differences in the mortality rates of dentists when their rates are compared to other health occupations and professionals is as yet a moot point. That is to say, many research reports conclude that the rates for loss by death of dentists are higher than for any other professional group (American Dental Association, 1977; Blachley, et al., 1963; Dean, 1969; Green, 1975; Simpson, 1976; Sword, 1977). At the same time, however, other reports conclude that this is not the case (Bureau of Economic Research and Statistics, 1977; Jackson & Mealia, 1977). Before there can be any definitive answer to this question, the various methodologies that are currently being used to investigate the problem need to be reviewed and one methodology agreed-upon as the best approach to the problem. Until that time, the mortality of dentists will remain a controversial subject. However, there is no question that dentistry can be a highly stressful occupation and that if the sources of stress are not effectively managed, they can lead to manifestations of strain and to a less productive and less satisfying practice life.

Fortunately, there is an alternative to the downward spiral. After 14 years of D.A.U., EFFDA and Team training programs at the State University of New York at Buffalo School of Dentistry, it is clear to us involved in them that the efficient use of 4-handed dentistry, dental auxiliaries, and management skills will reduce most practice stressors to a very tolerable level. But this premise II demands a third - that the dentist and the potential auxiliaries both

have a high degree of skill in both clinical and managerial aspects of dentistry.

For the dental assistant, the backbone of his/her clinical skills should be a high degree of proficiency in all aspects of 4-handed dentistry. Proper positioning of the total dental team and equipment; all aspects of instrument transfer; proper suction-tip placement; and see-ability techniques, these should be the dental assistant's strongest clinical skills and his/her unique contribution to the dental team. For the last two years, Dr. Chet Gary, a clinical instructor with the U.B. Team Program, has been involved in teaching a standard version of 4-handed dentistry to dental assisting students, to dental assistants, dental students, and practicing dentists. Based on these experiences, he has developed clear ideas about what should be taught about 4-handed dentistry and to whom. He shares that thinking with us in the addendum to this paper and his ability to combine the perspectives of dental student, practicing dentist, and clinical instructor make his comments an even more valuable contribution. It is also important to note that when it comes to relieving practice stress related to numbers 1, 2, 7, 8 and 13 in Table 2, efficient 4-handed dentistry is unsurpassed. The physical manifestations of strain described in items number 1,2, 4, 5 and 6 in Table 3 are significantly less likely to occur when the techniques for proper 4-handed dentistry are consistently applied. If to those aspects of 4-handed dentistry described above, one also adds all the support services that are necessary to do 4-handed dentistry, approximately half the work and stress associated with the practice of dentistry can be alleviated (Waterman, 1952). These support services include: (1) sterilization, disinfection, and sanitizing techniques; (2) pre-set instrument trays; (3) the manipulation of dental materials; (4) sharpening instruments;

(5) general care and maintenance of the dental unit (hand-pieces, chair, evacuation equipment, etc.); and (6) cleaning up after procedures.

Table 4 attempts a comprehensive listing of the clinical competencies that the well-trained dental assistant should have. It is my perception that these basic competencies have not undergone much change in recent years nor is there reason to believe that they will in the next 20 years. The possible exceptions are the preeminence given 4-handed dentistry, the increased emphasis on preventive dentistry, and the inclusion of number sever, knowning how and being willing to assist other types of dental auxiliaries. As more and more dental practices follow the current trend of the multi-auxiliary office, the dental assistant will be increasingly called upon to assist hygienists and expanded function duty hygienists.

Table 4. Clinical Competencies Required of Dental Assistants

1.	Total 4-handed dentistry: Proper positioning of the dental team and equipment, all aspects of instrument transfer; proper suction-tip placement; and see-ability techniques. All support services necessary for the use of 4-handed dentistry: sterilization, disinfection and sanitizing techniques; pre-set instrument trays; the manipulation of dental materials; sharpening of instruments; general care and maintenance of the dental unit and operatory; and cleaning up following procedures.
2.	Should know all dental terminology.
3.	Background in life sciences, including general anatomy, structure and function of the head and neck, tissue pathology, microbiology, pharmacology, and diet and nutrition as related to dental health.
4.	Place, expose, process and mount radiographs.
5.	Assist in the placement and removal of rubber dams, matrices, and wedges.
6.	Assist with all aspects of preventive dentistry.
7.	Know how to and be willing to assist other types of dental auxiliaries.
8.	Assist with impressions.
9.	Assist with all first-aid procedures.
10.	Know and abide by all safety precautions.
11.	Know how to fill out routine paperwork and get the doctor's signature.
12.	Know how to prepare work for the laboratory.

No matter how proficient the dental assistant becomes in the twelve clinical competencies described above, s/he will need to be equally well-versed in the managerial aspects of dentistry to be the most marketable. There are several reasons why this is true. First, like our dental practice students, many dental students will be exposed to

dental practice management as part of their dental training. As tomorrow's practicing dentists, these students will be looking for and giving priority to dental assistants who share similar values and knowledge about management. Another reason this is true is that there is a growing trend in dentistry away from the solo model of treatment and toward group and team approaches to the delivery of dental services. The team approach brings with it the need for good management and the dental assistant should have management skills in order to function intelligently in these settings. A last reason is that there is definitely a growing trend toward franchise dentistry. Simply stated, franchise dentistry intends to bring the providers of dentistry and the users of dentistry together in a cost-effective, profit-making venture. For example, the owners of "Mr. Donut" and a management firm have teamed up with dentists to create Omnidentix out of Wellesburg, Mass. In the next five years, Omnidentix plans to spread franchises across the country much like Mr. Donut shops which are located in prime buying areas like malls and alongside major arteries. The underlying concept is one of retail dentistry; as the consumer shops for other things, s/he can stop in and pick up a few dental services. Dental assistants in these settings will be constantly exposed to management. Once again, dental assisting curricula should prepare them for such settings by teaching management.

The backbone of the dental assistant's management skills should be strong capabilities in the areas of (1) communication; (2) interpersonal relationships; and (3) group dynamics. Not enough can be said about the need for good communication within the dental office. This is not just a "trendy" term that has been thrown in but a corner-stone of the practice. Good communication is fundamental to establishing good interpersonal relationships between the dentist and the assistant,

the assistant and other assistants, and between the assistant and the patient. For example, between dentist and assistant, good communication is essential to: (1) the establishment of 4-handed dentistry; (2) the development and dissemination of policies and procedures; (3) giving and receiving quality control feedback; and (4) the establishment of ethical and reasonable employer-employee relations. Between assistant and assistant, good communication patterns can largely eliminate misunderstandings, personal rivalries, and tendencies to complain. When communication is good, each assistant gets to know the other, what the assigned tasks of each are, and how and under what circumstances they can be of assistance to each other. Now, when it comes to the patient and the assistant, good communication becomes even more essential because the dental assistant usually has more patient contact than any other person in the dental office. Patient trust and rapport most often start with how the dental assistant greets, treats, and talks. Patients will say things to her/him that they would never say to the dentist and it is s/he more often than not who is the informal spokesperson for the office.

As important as good communication is, too many dental assistants do not express themselves effectively to employers, to other assistants or to patients. To do so requires: (1) knowledge of how to communicate effectively; (2) general funds of knowledge to communicate; and (3) a norm to communicate effectively. I might also add that a norm for empathic and understanding interpersonal relationships with strong mutual respect and help-giving aspects also needs to be promulgated. For example, we do not refer to the team auxiliaries as "girls." Neither do we reinforce students or anyone else in this behavior, by not commenting each time this terminology is used in our presence. The team assistants and expanded function duty hygienists are totally competent dental auxiliaries

and women. The assistants know all aspects of 4-handed dentistry, can teach and evaluate 4-handed performance, and can perform all the other clinical competencies. In addition, their abilities to communicate, to establish wholesome interpersonal relationships and to function in a group context is phenomenal and growing all the time. If there is anyone who wants to see a superb set of dental auxiliaries, I invite you to our Team clinic.

One last point needs to be made. It concerns the connection between the good communication cluster and the reduction of practice stressors. Without the other areas of management, the good communication cluster alone can reduce stress from factors 4, 6, 12, 14 and 16 in Table 2.

Table 5 attempts a comprehensive listing of the managerial competencies that the well-trained dental assistant will need. It is my perception that including and emphasizing the large number of managerial competencies is a relatively new trend in dental assisting curricula, but one that is picking up momentum all the time. In particular, I am thinking about the dental assisting curriculum at the Erie County BOCES program. During the past year, that curriculum has been undergoing major revisions and the draft I saw of the proposed curriculum contained training for many managerial competencies. Their thinking in this regard definitely reflects foresight and it is heartening to think that dental assistants will be trained today to fit the demands of tomorrow's practices.

Table 5. Managerial Competencies
Required of Dental Assistants

1. Ability to communicate effectively, to establish good interpersonal relationships, and to function in a group context.
2. Should be well-oriented to the fields of dentistry and dental assisting: the nature of dentistry, the sources of stress associated with the practice of dentistry; what stress is, the strain responses and the downward spiral; areas of practice within dentistry, professional organizations; and the Code of Ethics of the A.D.A.A.
3. Inventory control and the storage of dental materials.
4. Knowledge of group-decisionmaking techniques.
5. How to conduct and to function in a problem-solving staff meeting.
6. Should know the rules governing duty delegation and what the legally delegable duties are in New York State.
7. Appointment control.
8. Reception duties: telephone techniques, office records, financial bookkeeping, banking procedures, office correspondence, business and patient files, and insurance forms.
9. An orientation toward continuing education.
10. Job-seeking skills: the employment interview, the resume, and proper attire.

The managerial competencies listed above can reduce practice stressors described in numbers 3, 10, and 11 in Table 2. In fact, the only practice stressors that have not been addressed by the combined clinical and managerial approach are numbers 5, 9, and 15. Insofar as number 5 is concerned, I have received much feedback to the effect that moving from operatory to operatory in the team practice of dentistry relieves most of that feeling of physical confinement. With regard to number 9, the dentist's career plan does not have to be any flatter nor does his role have to be any tighter that s/he wants it to be. Stress from factor 9 is

thus largely self-imposed. If an auxiliary is perceptive enough and knows how to communicate well enough, she can recognize when her employer is imposing stress upon himself and can point this out to him in a manner that s/he can accept. The generally negative public attitudes towards dentistry listed in number 15 already are beginning to change. As more enlightened dentists team up with more well-trained auxiliaries to work on more educated patients, the more we will see a positive shift in the public and professional images of dentistry. Hopefully, certified dental assistants, competent people that they are, will be recognized officially by the New York State Dental Society; and in the year 2000 all of dentistry will be seen as delivering the highest quality services to the most people, at the least cost, and with the least stress involved for all.

Table 6 abstracts those aspects of this presentation that will be applicable to training programs for toher types of entry level support personnel.

Table 6. Generalizable Aspects of this Presentation

1. Emphasis on stress-reduction and stress management.
2. Emphasis on prevention as opposed to purely secondary treatment.
3. Increasing emphasis on competence in basic skills: important issues here include efficiency, productivity, duty delegation, and quality control.
4. The team approach to the delivery of health care services and the increasing use of trained assistants; the need for personnel and office management.
5. The true value of entry level support personnel in the delivery of health care services. These people are the backbones of existing and developing delivery systems. Second-class status for them is no longer acceptable.

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- ADDENDUM -

PRINCIPLES OF FOUR-HANDED DENTISTRY FOR STUDENTS IN DENTAL ASSISTING

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The ability of the dental profession to meet the increased demand for services is directly related to the efficient use of dental auxiliaries. An unanticipated benefit accompanying increased use of dental auxiliaries is decreased practice stress and the potential for a longer, more enjoyable practice life for the entire dental team.

Since their inception, D.A.U. and T.E.A.M. programs have taught dental students all the essentials of four-handed dentistry. The nature of four-handed dentistry often makes it impractical to isolate the activities of separate members of the team, but still these training programs have attempted these separations to the greater training benefit of the student. It is my feeling that dental assistants should receive the same information and training as dental students regarding all aspects of four-handed dentistry. This conviction has come from my experiences as a dental student, practicing dentist and clinical instructor with a T.E.A.M. program.

For example, as a dental student, I experienced solo operation, operating with an auxiliary minimally trained in four-handed skills and working with highly skilled assistants in D.A.U. and T.E.A.M. The great help provided by skilled assistants in terms of decreased stress and increased effectiveness was obvious even to me as a student with embryonic knowledge of auxiliary utilization. In fact, as the proficiency of the assistant increased, the smoother was the operation and more importantly at this time, the more I learned.

I carried over this feeling into my practice-life. Experiencing solo operation, working with a minimally trained assistant and in various settings, working with an assistant highly trained in four-handed skills verified my contention that to have "just an assistant" is not enough. To maximize her contribution to the operation, the dental assistant should be trained in all aspects of 4-handed skills.

As a clinical instructor in a T.E.A.M. program, I have had the opportunity to work closely with dental students, dental auxiliaries, and practicing dentists. Dental students enter T.E.A.M. clinic with minimal four-handed experience. I provide a demonstration and presentation to the student and our highly trained auxiliaries function as teachers. By the end of their two weeks here, students become skilled practitioners of four-handed dentistry.

Last week practicing dentists who had been out of school for some 7 to 30 years participated in a four-handed continuing education course offered by our program. T.E.A.M. faculty and staff instructed these dentists and their chairside assistants in standard 4-handed techniques with the goal of bringing both the dentist and the assistant to a comparable level of expertise on the subject. Progress on the two-day course was exceptional and further substantiated the need for comparable training for auxiliaries.

In the remainder of the paper, I will enumerate objectives I feel should be achieved by a dental assisting student in four-handed dentistry. The list is not exhaustive[1] and I feel open communication between dentist and assistant is essential to the implementation of these and any other activities.

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[1]Additional information is available upon request.

I. Proper Patient Positioning

The Assistant should be able to:

- seat the patient with the chair tilted forward at a comfortable height, with the back of the chair at a 45° angle to the floor, and with the right arm of the chair raised. The headrest should be clean.
- put the patient in a supine position with the head no lower than the feet. This rule avoids rushing blood to the patient's head.
- put the patient in a partly upright position where the mandibular occlusal plane is parallel to the floor when open (operator's preference).
- adjust the position of the patient in the chair so that the head is back, near the end of the headrest and near to the operator's side of the headrest.
- raise the chair slightly above the ultimate operator's height.
- maintain patient rapport by keeping a positive attitude regarding the positioning, by assuring the patient that s/he will only be there a short time and by allowing the dentist to maintain good access and vision.

II. Proper Operator Positioning

The assistant should be able to:

- understand proper operator position and its relationship to vision, access and decreased stress. The operator's feet should be flat on the ground with thighs parallel to the floor in order not to impinge blood vessels and nerves on underside of legs. The operator should use the entire seat of his stool and keep the backrest in the small of his back. The operator's back should remain relatively straight for muscle support. The operator's shoulders should be parallel to the floor and his neck should be slightly bent, with eyes directed downward to avoid bending the neck. The operator's eyes should remain a minimum of 14 inches from the mouth and should be kept focused there to avoid eyestrain. The operator's arms should hang

close to the sides with elbows at right angles and wrists straight. The patient's head should rest on the lap of the operator, slightly above his elbow height.

III. Proper Assistant Positioning

The Assistant should always be cognizant of her proper position. This means that the assistant should:

- position herself 4 inches higher than the operator for mandibular operations and 6 inches above the operator for maxillary operations (height is measured at eyeball level).
- maintain the forward edge of her chair at the level of the patient's mouth.
- be positioned close enough to the patient that her knees may touch the patient's left shoulder.
- rest her feet on the supporting ring of her stool.
- sit on as much of the stool seat as possible.
- bring the body support arm around under her rib cage for support as she leans slightly forward.
- keep her neck relatively straight but her eyes should be directed downward to decrease stress on her neck.
- remember that good posture will not allow her to see everything the operator does, but it will allow her to see enough to perform her duties and not obstruct lighting.

IV. Instrument Transfer: The Syringe

The Assistant should be able to:

- prepare topical and anesthetic.
- prepare the syringe and load, engage, clear and loosen the cap in preparation for the transfer.
- restrain difficult patients with her free hand when necessary.
- aid the operator in administering the injection by keeping the syringe out of the patient's view. At the same time, the operator

should use his hand and the fingers of his retraction hand to block vision. He should tilt the patient's head back slightly and place the light at the bridge of the nose to reflect in the patient's eyes if s/he attempts to look at the injection. The operator should keep the patient's eyes focused on his own by directing his eyes only on the injection site.

- actively place the prepared syringe in the operator's hand. The operator will accept the syringe with his palm open and his thumb up, and the syringe should be transferred at the patient's left shoulder.
- accept the syringe as it is returned to the same area at the patient's left shoulder.

V. Instrument Transfer: The Parallel Technique/The Palm-Grasp Technique

The Assistant should be able to:

- (during the operator's working stage) hold the instrument by the end opposite the end placed in the dentist's hand, using her thumb and first two fingers. Her third and small fingers are then free to receive the instrument being used by the dentist.
- respond to the operator's signal of need for a new instrument. The operator should anticipate the need and signal the need by rolling the used instrument out of the mouth deliberately while still keeping both finger rest and eyes on the operating field. The assistant should move the new instrument near the operator's used instrument until they are parallel.
- pick up the used instrument with her third and small fingers, tuck them into her palm, and then roll the new instrument into the operator's hand in the proper position for use. The dentist then needs only to move his fingers in order to put the instrument into use.

VI. Suction Tip Manipulation

The Assistant should be able to:

- hold the suction tip in her right hand with a palm-grasp.

- hold the suction tip as close to the tooth being prepared as possible without injuring soft tissue.
- place the belvel parallel to the buccal or lingual to the tooth being prepared and at a height about even with the occlusal surface.
- follow principles of "see-ability" for best vision and access in all areas of the mouth.

The methodology for achieving these ends should include presentations and demonstrations by both a dentist and an assistant on concepts of four-handed dentistry. Both points of view are helpful in presenting a realistic picture. Assistants working among themselves, role-playing the parts of dentist, of assistant, and of patient also gives invaluable information concerning the effects of different behaviors by one member of the team or another. Finally, videotaping and practicing with as many dental students as possible helps to fine tune chairside skills and helps dental assistants to become indispensable members of the dental team.

COMPETENCIES IN COLLABORATION AND CARING

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I am delighted to be able to communicate with this group for a number of reasons. Firstly, it seems to me that you are putting yourselves on the leading edge of innovation in occupational education with your Futures Project. I am happy to be able to contribute to this process. Hopefully, I can impact in some indirect way, those persons who will be responsible for our well-being at times when we are most vulnerable; during a hospitalization, a medical or dental procedure, and in our old age.

Secondly, it gives me the chance to sound my trumpet somewhat for the values which drive me in my career--that attention to the needs of the person in the health occupations workplace humanizes the society for us all.

And thirdly, as a former eastern urban person, now living on the west coast it is wonderful to have the opportunity to be in New York.

I come to speak to this group, not as an academic but as a former nursing educator, manager and now practitioner. These activities form the bulk of my career experience. I will try as much as possible to give concrete examples from my experience. In my 20 years in the health care industry, I have felt rewarded, exploited, devoured and uplifted. It was the experience of these conflicts inherent in human services delivery that led me to my current career path, and indeed to speaking to your concerns as well.

Over the years it has become clear to me that the health needs of persons in the workplace are woefully neglected. We have made strides in providing a safer work environment, but not necessarily a healthier one. However, a great proportion of our day, and much of our social contact, revolves around the workplace. It seemed to me, therefore, the logical place to impact sufficiently large numbers of persons to develop healthier life habits and more vigorous and joyful life stages.

In the health care industry special conditions exist for the worker. This field required not only technical competencies but also an enormous outpouring of emotional energy. We, after all, have contact with people at their most needful times--sustaining physical injury, facing emotional trauma, physical deterioration, loss, isolation and even death. I became aware that "caring for the care-givers," to borrow a phrase from the Hospice Movement, assumed enormous importance. The health care consumer is the ultimate beneficiary of humane and competent services when care-givers themselves are nourished, supported and replenished by the system which they serve.

To serve that purpose, I sought and found myself a position in which to take action. I am employed by the Personnel Service Dept. of a 400 bed inner city hospital, Providence Medical Center in Seattle, WA. Within the framework of a general hospital, PMC specializes in high technology heart research and reconstructive surgery. I have responsibility for the Employee Assistance Program, a counseling and referral service for employees having difficulties on the job or at home or both.

In addition to the Employee Assistance Program, and certainly as part of an approach to employee problems, I have designed and implemented

a Health Promotion Program for employees. The conceptual framework is based on two sources; firstly, the study by Belloc & Breslow which indicates that the health and longevity of Americans can be positively impacted by attention to fairly simple lifestyle habits; secondly, the needs of the potential participants in the program.

With these concepts in mind, I did a Needs Analysis by questionnaire and proceeded to design a Health Promotion Program. This includes health education courses and seminars treating stress management, nutrition, weight control, smoking, hypertension, cancer screening, relaxation techniques and exercise groups.

Both the Employee Assistance and Health Promotion Programs are important for two reasons. Firstly, they meet definite needs of health care workers who are often overstressed, overworked and overweight. Secondly, and prehaps more importantly, is the metacommunication to the employee that she/he is important to the organization. The organization cares enough about its employees to provide these services. This attitude of caring osmotically permeates the institutional environment.

If there is a need today to provide these kinds of services to health care workers already employed by the system, there is certainly a parallel need to provide the student with updated coping mechanisms which she/he will need when eventually employed by the system. The current working environment has much to suggest to educators to better prepare the new workers for a changing environment.

It is my prupose in this paper to defire the current, and suggest the future problems of health care delivery systems in terms of the scenario, the worker, the workplace and the work; and to suggest some

solutions that can be provided by the educational process.

The Scenario

As a group, this committee has stated as its purpose the examination of possible future scenarios in health services delivery and the design of future curricula in health occupations to meet anticipated needs. With Dr. Bezold's and other's help, I understand, you have examined various scenarios for health care delivery systems. You have probably seen what we can expect from continued growth, collapse, conserver and transformation models, and have looked at some new roles.

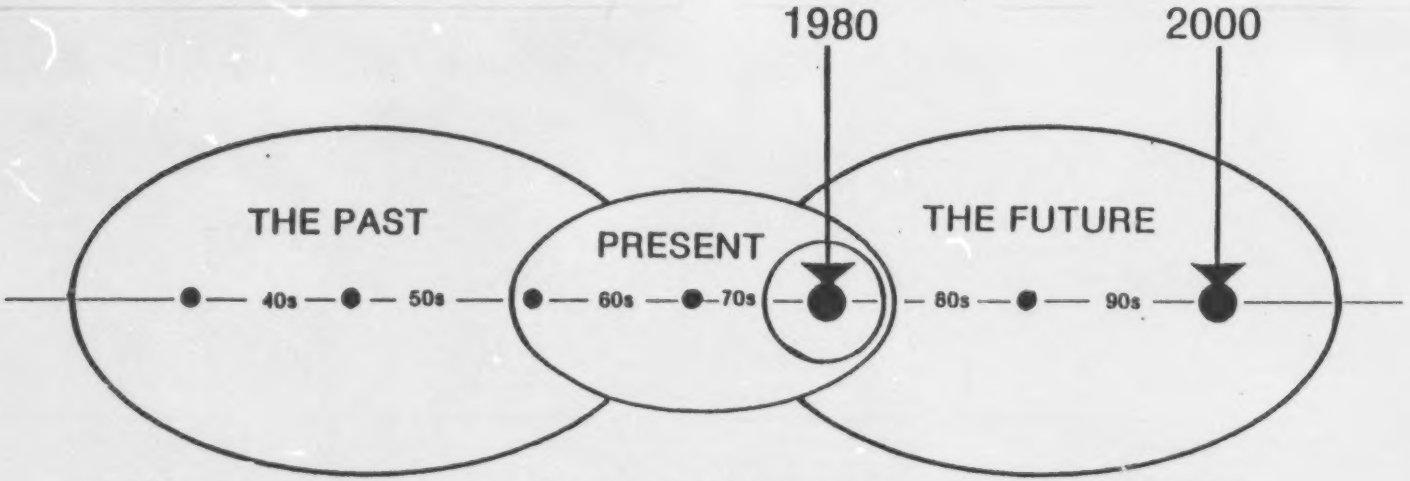
It is by examining the options that you can choose not only to react to adapt to and survive the existing conditions, but to pro-act, and create the conditions we want. Stated another way, you can meet the needs that the future will create. You can also create the future to meet human needs.

In the study of future scenarios it is difficult to say when the future is supposed to start. To paraphrase Pogo, "I have looked into the future, and it is now." Many of these trends are already occuring. I would like to examine my view of the changing scenario in health care, discuss the kind of workers we are attracting, talk about hteir problems and the problems of the work and offer some solutions.

Let me define a general model to illustrate a time frame of past and present, and how the future might be suggested.

1. A period of time defined by the decades of the 40's and 50's to typify the relatively recent past.

DOMINANT FEATURES IN A CHANGING HEALTH DELIVERY SYSTEM



TRADITIONAL HIERARCHY

- OLD ORDER UNDER WHICH MUCH OF CURRENT STRUCTURE WAS DESIGNED
- PHYSICIAN—NURSE—ORDERLY-ROLES
- PERMANENCE
- ALTRUISM, WORK ETHIC, AND RELIGIOUS MOTIVATION
- SICKNESS REACTION
- "THEORY X" MANAGEMENT
- TRADITIONAL PROPS:
  - "WATERWINGS"

TRANSITIONAL CONFUSION

- DECLINE IN TRADITIONAL STRUCTURE & ROLES
- CHANGING WORKFORCE IMPACTED BY SOCIETAL CHANGES
- DIVERSIFIED ROLES
- HIGH TECHNOLOGY
- HIGH TURNOVER
- FAMILY BREAKDOWN BURNOUT, ABSENTEEISM
- ANXIETY REACTIONS-
  -DRUG AND ALCOHOL ABUSE
- STAFF SHORTAGES
- HIGHER COSTS/TIGHT BUDGETS

DEFLATE[illegible]

COLLABORATIVE HIERARCHY

- REQUIREMENT FOR MORE ADVANCED INTERPERSONAL TECHNICAL, AND MANAGEMENT SKILLS
- MORE COMPLEX ROLES
- VERY HIGH TECHNOLOGY
- PSYCHOLOGICAL AND HEALTH SERVICES FROM THE WORK SETTING
- COOPERATIVE SKILLS AND COPING MECHANISMS
- HEALTH PROMOTION AS WELL AS SICKNESS REACTION
- "THEORY Y" MANAGEMENT
- "NEW FLOTATION DEVICES"

2. A "present" to include the two most recent decades.
3. A future beginning in this decade and extending through the turn of the century.

Within these time frames I see three components of change:

1. The breakdown of authoritarian "caste" system in health care services.
2. Some period of transitional uncertainty.
3. A "collaborative hierarchy" model with adoption of management principles borrowed from the large body of management science operative in current business practice combined with the sensitivities inherent in human services.

The old order, the traditional system, consists of the physician ruling class directing the elements of patient care by decree, the doctor's orders. All other activities existed to support the transaction between the doctor and patient. An enormous gap existed, in terms of power, prestige and monetary reward, between the traditional ruling class, and the worker engaged to carry our the decrees. The limited number of applicants allowed into this class, combined with the professional socialization of the priviledged few, served well for many years to ensure the continued existence of the system.

The old order is being challenged, however, and indeed some chaos and uncertainty is manifest. The transitional confusion we are currently experiencing derives from the decline of traditional structures and roles in conflict with the needs for a replacement structure and the creation of new roles. We are seeing the swelling ranks of middle class health care workers composed of highly trained persons in nursing, medical

technology, behavioral sciences and management beginning to challenge the old aristocracy. As the special competencies of this group become defined, the new workers are demanding a greater role in the planning and performance of services to clients in the health care system. They are questioning the very structure of the system and are requiring a greater share of the rewards.

In some progressive settings, they are forming for the future, what I would describe as a "collaborative hierachy." It is collaborative because it is competency based, where technical, interpersonal and management skills of several disciplines are recognized, utilized and rewarded. It is hierarchical because leadership and accountability have a necessary role in the structure.

A model for change in the traditional hierarchy is being provided for us by the mental health setting. The development of the model of interdisciplinary collaboration of all levels of mental health workers was largely stimulated by the entry of the "social activist" into the mental health system. The paraprofessionals with varied backgrounds were found not only to be effective in the therapeutic milieu, but also to play a role in changing the very system by challenging the traditional elitist framework of mental illness treatment.

The Worker

Since an environment is, for the most part, defined by the people and their interactions within it, let us examine the worker in the present decade. Societal forces are changing the composition and characteristics of the health care worker group being attracted towards careers in health

services delivery. These forces include values shifts, the socioeconomic climate, the nature of the younger worker, the entrance of the older worker and the social activist as an influence.

We can no longer assume that the potential health care worker is motivated solely by the desire to serve a suffering humanity. It is no longer sufficient to base our training of these persons on the notion that we simply have to build technical skills on to this altruistic base. The health care delivery system is, quite simply, a field where jobs are plentiful and some degree of security insured.

Nor can we assume that religious teaching forms the basis of the values in the socialization of our potential worker. Her/his behavior choices are not necessarily likely to be guided by firm religious beliefs.

The work ethic has declined as a motivating factor. When a potential health care worker in an entry level position comes from a family of three generations of welfare recipients, her/his choice in work behavior may not comply with the needs of the system. The attitudes of reliability and punctuality reuqired by supervisors may be ignored or undermined by the family and social circle of such a worker.

Upward social mobility of workers since World War II has changed the composition of the health care workforce. Increasing numbers of talented persons, especially women, are in the position of choosing from many different career options with higher monetary rewards. A beneficial corollary is the diversity of talents that increasing numbers of men are bringing into health care in both para-professional and nursing functions.

The younger worker brings special problems as well as unique contributions. They come from a social structure which has experienced tremendous

shattering of relationships. It is difficult to teach the young person who comes from a neighborhood where there is only one intact family on the block, the value of responsibility and permanence in interpersonal and professional relationships. The anxieties of young persons are often triggered by the nature of thw work. These anxieties may be manifested in drug and alcohol abuse. Her/his needs for reassurance and attention are often masked by acting-out. They may acquire the label "trouble-maker" or "job hopper." They can stress the system with the need for immediate gratification and reward just as the systems stresses them. However, these same youth have an enormous store of idealism and confidence to be tapped and nurtured. They have resilience and energy that can vitalize and rejuvenate.

The older worker enters the field often with the maturity wrought by being more in touch with life and death issues from their peraonal experience. Older workers tend to see the gravity of their actions in the care of the ill. Their needs are different. They sometimes lack confidence, feel powerless, and need patience and reassurance to respond to their repetitious questions which manifest their anxiety. Alcohol abuse and depression are the profound results of failure to cope in the older worker.

The social activist in health care provide an interesting contrast. These persons often choose the health care industry in entry level positions, despite high academic qualifications because it is the place where they can receive a pay check. They bring a diversity of attitudes and usually a greater sense of their own power. Their frustration for upward mobility creates action to change the system to a more collaborative model. Sometimes, especially in mental health, they succeed.

Shirley is a 25 year old, divorced mother who recently moved to Seattle from rural Oregon. Her two preschool children remain in Oregon in the foster home in which she was forced to place them during her years as a drug abuser. She sought counseling during her first week of employment as a nursing assistant because she couldn't stop crying. We continued to have twice weekly sessions to help her deal with her grief at being separated from her children, her loneliness in a big city, and her need to continue to deal with her addictive urges. Over time she began to feel a part of the work group, established some friendships and developed ways of being a "long-distance mother." She meets regularly with a Narcotics Anonymous Group and voluntarily submits to random urine testing.

Dwayne is a 30 year ond nursing assistant who voluntarily sought counseling. He arrived for his first appointment accompanied by his wife. They related a story of enormous family stress--three preschool daughters and the recent arrival in the household of two acting-out, teenage stepsons. Dwayne moonlights after his evening shift in an all-night restaurant to supplement his very low salary and keep food on the table. He is chronically tired at work. He and his wife are talking about divorce.

Rowena is a 50 year old black woman who received a disciplinary letter and 5 days suspension for appearing intoxicated at work for the 6th documented time. Her children are grown and gone. Hew husband disappeared years ago. Her social circle is narrowed to a few church activities and work. The work is routine and her supervisor belittles her. She drinks to assuage her loneliness. However, she presents as intelligent and open in her attitudes and agreed to joining AA. She is developing some ways of meeting her needs for social contact. Through role playing, she is learning ways to confront her supervisor's attitudes toward her to achieve a favorable outcome.

These are fictionalized accounts of actual cases in Employee Assistance Counseling. They are representative of the problems of many health care workers with whom I have contact. I think they adequately represent some of the problems of the workforce in entry level positions now and in the near future.

The Workplace

A second component of our environment is the workplace itself and the demands it imposes. A recent personnel study was done at Providence Medical Center to determine why people left their jobs. The most consistent reasons were low pay, lack of adequate supervision, and a workload impossible to perform in an eight hour day. My experience suggests deeper issues which often lie beneath the surface, and are easily overlooked in simple surveys.

We expect health care workers to operate in a system which does not staff to execute the ideal in patient care. The nurses aide knows that by giving complete and comprehensive care to one patient, meeting his physical and emotional needs, she will shortchange the next. He/she finds herself triaging to prioritize their limited time. The resulting internal conflicts can be very severe. At some point the conflict becomes so stressful that the worker protects himself by no longer caring. "Burn-out" has reared its ugly head, and the system extrudes the burned out employee.

Where Peter Principle operates in health care organizations, the worker may find himself accountable to a supervisor who has so many needs of his won that he is prey to manipulations of the more exploitive in the group. The result can be favoritism, unequal distribution of work loads and scapegoating of the least favored or the least powerful in the work group--the entry level worker.

At its most benign the system may simply ignore the worker of fail to praise a job well done. There may be little incentive or opportunity

provided for future education and growth. Pay scales often do not reflect the economic realities of life in the city. The workplace must adjust to the realities of the present and evolve a future in tune not only with the demands of the health care consumer, but also with the requirements of those who must deliver care.

The Work

Perhaps the most consistant element of the environment is the work encountered in health care delivery. Hospitals have always involved stressful work.

> The lab assistant, Kathy, approached Mr. Halliday's room early one morning for the third time in a week to take blood. She hated hurting him because she knew he was seriously ill and had been receiving highly toxic medication. His blood picture needed frequent monitoring. She had admired his dignity and his sense of humor. He reminded her of her father. Her contact with him gave her a special lift that stayed with her throughout the day. When she entered the room she found his bed was empty and neatly made up with fresh linen. There were no personal belongings on the bedside table. He had died during the night. Kathy left the room in tears. A few days later she resigned.

> Ted had started to work as an Emergency Room assistant a few weeks previously. He had anticipated an exciting and glamorous life, assisting the nurses and doctors in life and death situations. He expected to feel important and needed. Instead he found that his presence was rarely acknowledged except in curt commands from the nurses and doctors to bring some needed supply or piece of equipment in a hurry. He spent many hours fetching wheelchairs and stretchers left around the hospital and restocking linen shelves. The psychotic patients hit him and the drunks vomited on him. He resigned after a month.

These actual situations describe how the nature of the work in health care services comes as a rude shock to those persons unprepared for it. Caring for ill people has some horrendous elements. Bedpans must be emptied and dressings changed. Patients do die, in spite of heroic efforts to prevent this, and sometimes before our very eyes in an agonizing way. We then try to pretend it has not happened.

People who are ill often regress to childlike behaviors. They become demanding, inconsiderate, and angry or they cease to respond at all and need care giving and equipment to assist with all their bodily functions. They kick, bite, lash out, fall down and fall out of bed. Sometimes they mutilate themselves. They need to be cared for 24 hours a day, 7 days a week. Patients are not computer terminals that can be turned off or assembly lines that can be walked away from.

The complexities of high technology medicine will continue to grow over the next decades. The momentum accrued by large institutions with sophisticated technology will not be diminished over the near future. With the practice of ever more complicated heart surgery and monitoring, obstetrical techniques, and pharmacological intervention, as a few examples, we can expect the care needs of the very ill person will require of the worker increasingly complex skills.

Manpower concerns to meet these needs will exacerbate with the attraction of health care workers into the more pleasant new healing modalities of the holistic health movement. Generations to come likely will be healthier, but there will still be the very ill and the very old to care for.

Some Solutions

I have so far described a rather bleak scenario - a witches brew of workers with limited coping skills confronting, wtih high expectations, a system where rewards and salaries are low, and workloads high. It is not surprising to find high absenteeism, high turnover and low quality of patient care as a result.

But the bleak picture is not the only picture. We have the resources, and the motivation, as evidenced by the work of this committee, to create alternatives.

John McKinlay (1) tells a simple story to illustrate the dilemmas of current medical practice.

> "You know", he said, "sometimes it feels like this. There I am standing by the shore of a swiftly flowing river and I hear the cry of a drowning man. So I jump into the river, put my arms around him, pull him to shore and apply artificial respiration. Just when he begins to breathe, there is another cry for help. So I jump into the river, reach him, pull him to shore, apply artificial respiration, and then just as he begins to breathe, another cry for help. So back in the river again, reaching, pulling, applying, breathing and then another yell. Again and again, without end, goes the sequence. You know, I am so busy jumping in, pulling them to shore, applying artificial respiration, that I have no time to see who the hell is upstream pushing them all in."

I would like to reconstruct this analogy characterizing the health care system as the river into which we throw our entry level workers. We hope their training will equip them to handle the rocks, the rapids and the whirlpools that they will meet in their careers. But we stand downstream

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(1) John McKinlay. "A Case for Refocusing Upstream - The Political Economy of Illness." Applying Behavorial Science to Cardiovascular Risk. American Heart Association Conference, Seattle 1974.

a ways and we see all too many of them getting out drenched, weary, angry and a little bruised. We need to look at providing them with some life rafts, some flotation devices with which we might prepare the worker of the future to navigate the difficulties of the river s/he has chosen. Perhaps previous generations of new workers were equipped with more traditional props or "water-wings" which modern society has deflated.

From my perspective downstream, I can throw them a line, a word of encouragement by providing the services which help to meet some of their needs while swimming the river. But you people are the ones upstream throwing them in. Your concern for providing them with the skills to stay afloat is indeed a hopeful and exciting prospect.

The flotation devices of the past will no longer work in the fast running river of the future. We must prepare our workers for the reality of emotionally and physically demanding work within a changing structure. The work has special stresses as well as unique rewards. Our workers need to be prepared for both. We must learn from the fledgling Hospice movement how to meet the needs of the care givers. We must teach them the skills and give them permission to look to each other, within themselves, and to the system for the replenishment of their resources. This approach, in my mind, is not merely a trendy new pop psychology or a "work benefit" in a bright economic future. It is an absolute necessity now.

> In the Coronary Care Units of 2 hospitals that I know, the staff meets regularly as a self-help group to talk about the feelings surrounding the demands and losses experienced in caring for the acutely ill heart patient. In my service we regularly sponsor workshops on acute job burnout and stress management. All levels of staff and all departments participate.

In your core curriculum for entry level health care workers I would include workshops and seminars with the following objectives:

- to learn the assertive skills necessary to ask for and receive appropriate supervision, support and psychological and health services for oneself from the work setting.
- to recognize the symptoms of acute job stress in oneself and to develop personal strategies to deal with those stresses.
- to learn how death and dying affect the health care worker.
- to develop skills to recognize the impact of losses on oneself and discover the necessities of the grieving process.
- to have the experience of self-disclosure of work-generated feelings in a group for mutual support.
- to develop the cooperative skills necessary to become part of a team approach in a collaborative setting.
- to participate in self care activities - exercise, relaxation, nutrition, balance between work and recreation, to strengthen ones own coping resources and to become role models of healthy behavior for patients.
- to develop positive attitudes about oneself and one's career choice as a basis for developing appropriate and ethical attitudes towards patients.

Caring for the care-givers is a rewarding career. Preparing the care-givers of the future in technical expertise, interpersonal competencies and self-care skills to "swim the river" with vigor, and occasionally joy, is the meaningful work you have chosen for yourselves. I wish for you energy and enthusiasm as you engage in the task of preparing the health care worker of the future. In the process, you create a more humane future for us all.

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DENTISTRY: WHAT'S NEXT

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This paper will present a picture of dentistry in the remaining two decades of the century and the resulting impact on dental personnel and the curricula they will require. Trends and influences in dental utilization will be presented as factors which affect the supply and demand of dental services. These factors are not independent variables; however, as many as possible will be treated separately to attempt to show their effect. These same trends and influences will be used as a base from which to draw future projections completing a picture of the future of dentistry. From these projections, the competencies needed by dental personnel and the resulting curricula changes necessary to train the personnel in those competencies will be addressed.

Past and Present Demand

"There is growing concern in this country with the inequality of access to health care. Beginning with President Eisenhower, national rhetoric has supported the proposition that the right to good health care can be considered an unwritten part of the American Constitution. Until recently, the focus has been on medical care. While 1973 data indicated no substantial differences between the poor and non-poor in physician visits,[1] the same cannot be said for dental services. Accordingly, dental care is receiving ever increasing attention as national strategies are planned."[2]

This statement can be substantiated by the nation's demand for dental services. In dentistry, as in most health care, utilization represents effective demand. In 1963, 42 percent of the population visited a dentist within a year. In 1977, that percentage rose to 49.7 percent, an average increase of approximately a half percent per year[3] (see Table 1 appended, p[1]). Utilization is a complex issue influenced by many factors including income, education, occupation, age, sex, race, geographic location, third party coverage, and attitudinal and behavioral concerns such as fear and anxiety.

Income, education, and occupation are all positively correlated with utilization. It should be noted, however, that even in the highest income range, utilization only approaches 62 percent, and in families where the head of the family is a minimum of a college graduate, utilization is only slightly more than 64 percent (see Table 2 appended, p [2]). Occupation is often assumed reflective of income and in fact follows the same trend: the higher the level of occupation, the higher the utilization of services.[2] Income and education have risen steadily over the last two decades and are factors in the present utilization rate.[4,5] (See Tables 3 and 4 pp [3] and [4].)

Yet, has income really increased?

Employment and Earnings, published monthly by the Bureau of Labor Statistics, indicates that gross income in actual dollars for full and part-time workers combined, rose from $145.00 in 1973 to $204.00 in 1978. However, the spendable income after taxes adjusted to 1967 dollars, decreased between $4.00 and $12.00 according to the number of dependents during this same five-year period.

Age and sex have played a less important role in the utilization rate. Children under five and the elderly consume the least amount of services, and if viewed graphically, it would appear as an inverse U-shaped curve with the peak utilization rates appearing between the age group of 17 to 24 years.[2,3] Females utilize dental services slightly more than males: in 1977, 51% of women reported a visit to a dentist within a year as opposed to 49% of the male population[3] (see Table 2, Appended p [2]).

In relation to race, most studies have measured utilization rates of whites compared to non-whites and have consistently reported that whites utilize dental services at a much higher rate than non-whites (see Table 2 Appended, p [2]). However, when race is cross-tabulated with either occupation or income, it appears that this discrepancy is rather small, and at times, non-whites utilize services more than whites in high income and education brackets.[2]

Geographic location and residence in metropolitan versus non-metropolitan areas also influence utilization. Residents of the Northeast and urban dwellers utilize services the most. However, this phenomenon may mirror the geographic distribution of dentists and the resulting dentist to population ratio.[2,3]

Primary barriers to utilization are cost of service and attitude toward care. Costs of dental services have risen at approximately the same rate as costs of all goods and services as documented by the Consumer Price Index[7] (see Table 5, Appended p [5]). Concurrently, there has been a dramatic increase in the percent of the population insured for all or part of dental treatment by some type of third party coverage.

Between 1967 and 1978 the number of people covered by dental insurance has increased from less than five million to more than sixty million[8] (see Table 6, Appended p [6]).

However, even population groups completely covered under either public or private sources do not exhibit a dramatic increase in utilization. This fact is illustrated by a number of studies which indicate that although utilization initially increases, the mean number of visits per year rarely exceeds the national average.[9,10,11] This trend may be attributed to behavioral barriers.

The types of services provided have continuously changed between 1957 and 1971. There has been an increase in certain aspects of dentistry such as cleanings, orthodontics, and fluoride applications and a decrease in the surgical phases such as fillings and extractions.[2,3]

In 1945, Grand Rapids, Michigan initiated the nation's first publicly fluoridated water supply. By 1975, about 50 percent of the population was being served by fluoridated water, comprising only 13 percent of the nation's water supply. People in these fluoridated communities receive both systemic and topical applications which can result in a 50-70 percent decrease in caries if exposure is continuous from birth.[12] In the last decade, only an additional five percent of the population has been added to the number receiving fluoridated public water.[13] If all other utilization factors were to remain constant, this would lead to a decrease in the number of teeth restored.

Attitudes toward oral health care vary. Culture, oral health education and experience, and general levels of awareness interact to produce individual patterns in utilization.[14] Since attitude is diffi-

cult, if not impossible to measure, it is hard to isolate any given factor in relation to increased utilization rates.

Past and Present Supply

There are several types of personnel involved in the delivery of dental care. Almost 300,000 individuals presently participate in direct delivery of oral health care. Thirty-eight percent of 111,178 of this number are dentists and the remainder are various types of auxiliaries who render or facilitate direct dental care.[15] It should be noted that ancillary personnel such as clerical personnel and dental technicians, who do not come in direct contact with patients, are not included in this number. Dentists are responsible for the delivery of all care rendered by themselves or by auxiliary personnel under their supervision. Successful completion of a three- or four-year dental curriculum accredited by the American Dental Association and successful performance on written and clinical examinations administered by a state or groups of states are necessary for licensure. For a dentist to have a practice limited to a specialization involves further formal education and examination.

Presently, there are three primary groups of auxiliaries involved in patient treatment: dental hygienists, dental assistants, and dental technicians. Dental hygienists are auxiliaries who traditionally perform intraoral functions associated with preventing dental disease, including performing prophylaxes (cleaning teeth), exposing and processing radiographs, applying intraoral topical fluorides and providing oral hygiene and nutritional instruction. Hygienists are graduates of either two- or four-year postsecondary education programs and like dentists, must be licensed by a state after successful performance on written and

clinical examinations.

Dental assistants are a more heterogeneous group. Their traditional function is to assist the dentist in the delivery of patient care. Assistants usually greet patients, prepare materials and pass instruments to the dentist. The practice of sit-down, four-handed dentistry (two hands of the dentist and two hands of the assistant), has become increasingly popular. It has been proven that through the use of this system, productivity can be increased by up to 75 percent. The application of work simplification principles minimizes time and motion expended for both the operator and assistant.[16] Dental assistants may be trained on-the-job, or in formal educational programs of various lengths offered through proprietary schools, community colleges or dental schools. The American Dental Association offers accreditation to programs with a minimum number of didactic and clinical instruction hours. These programs are usually a year in duration and graduates are eligible to sit for a National Certification Examination offered by the American Dental Assistants Association. The present assistant work force has primarily been trained on-the-job.

Dental technicians fabricate prosthetic appliances such as dentures and fixed and removable bridges. Like assistants, technicians may be educated formally or trained on the job. Although technicians may be employed in either private laboratories or on-site in dental practices, the vast majority (over 75%) are employed in private laboratories.[3]

Between 1950 and 1977, the number of hygienists increased ten-fold, while the number of assistants more than doubled and the number of technicians almost tripled.[3] In 1977, it was estimated that 32,200 hygienists, 144,700 assistants and 45,100 technicians were actively employed.[3] It

should be noted, however, that hygienists and assistants often move in and out of the work force and are not necessarily employed full-time. Additionally, the trend of rapid increase in the number of auxiliaries has been reversing over the last three years. Although there has been an increase in the number of programs there has been a decrease in the number of assistant and hygienist trainees[17] (see Table 7, Appended p [7]).

State Dental Practice Acts govern the duties which auxiliaries may perform and these acts vary widely from state to state. In New York State, for example, the only intraoral procedure which an assistant may legally perform is exposing and processing radiographs.[18] In contrast, Pennsylvania dental assistants may perform a wide range of duties including placing and carving (contouring to natural anatomical shape) restorative filling materials. Hygienists and technicians face similar limitations in duties.

In the sixties and early seventies, it was estimated that a dramatic increase in the demand for dental care would result from an increase in population, economic growth, rising levels of education, increased third-party coverage and the possibility of dental treatment as a component of some type of National Health Insurance.[19-23] In 1970, the fear that a manpower crisis was quickly emerging was validated by a Carnegie Commission report, Higher Education and the Nation's Health Policies for Medical and Dental Education, which recommended that the crisis be alleviated by taking three steps: increasing dental school enrollment by 20 percent, decreasing the length of a dentist's training from four years to three, and providing special training to auxiliaries who, in turn, could assume some of the dentist's responsibilities.[24]

Public effort, in terms of financial support, for education of dental personnel has been, and is, very important. In New York State, both the state and federal governments contribute to the education of dentists in the state and private schools. During the last decade, the federal government, in a move to alleviate the anticipated manpower shortage prioritized monies into various forms of assistance for health professions education in the form of construction aid, capitation funding, and research grants for training new types of auxiliary personnel[25,26] (see Table 8, Appended p [8]). Dental school enrollments increased with the availability of new facilities. Capitation was linked to increases in class size; schools were financially enticed to reduce the length of dental education from four to three years, and experimental programs in auxiliary utilization were initiated.

Predating this concerted effort and beginning in 1961, the federal government provided funding for Dental Auxiliary Utilization (DAU) Programs to be instituted in the nation's dental schools. The aim of the DAU Program was (and is) to teach dental students the efficient use of chairside dental assistants. As part of their didactic and clinical instruction, dental students work with well-trained assistants and learn the rudiments of four-handed dentistry. Although funding for DAU Programs has been phased out, this training is mandatory for dental school accreditation and has been maintained by all dental schools.

In the late 1960's federal funding was allocated for further experimentation in increased auxiliary utilization. At several sites across the country it was demonstrated that auxiliaries could be trained in a relatively short period of time (periods ranging from seven to forty-two

weeks) to perform certain intraoral procedures usually performed by a dentist.[22,27,28] It was also demonstrated that the quality of the product was maintained and the productivity of the dentist could be increased by up to 130 percent over the traditional dentist-auxiliary mode of delivery.[21] As a result of these studies federal funds were made available to dental schools to establish Dental Team Practice Programs to train dental students in multiple auxiliary management and utilization. Additional funding was also made available to train auxiliaries to perform the expanded functions. The expected increase in demand never materialized and therefore professional reaction toward auxiliary utilization has changed. The American Dental Association, although once in favor of future experimentation in auxiliary utilization, has retrenched its position regarding actual practice of dentistry utilizing expanded duty auxiliaries. This change in position might be viewed as a statement of self-protection in light of an increasing supply and perhaps an oversupply, of dental manpower. The ADA's position is supported by most State Practice Acts which severely limit the use of expanded duty auxiliaries. Studies have shown, however, that younger dentists who have experienced DAU and TEAM training as part of their education are more receptive to employing and delegating tasks to these auxiliaries.[29-35] The professional stance, however, is a reflection of the membership, comprised mainly of dentists who have not experienced auxiliary utilization as part of their education. From 1952 to 1976, the percent of dentists who employ at least one auxiliary has increased from 73.1 to 94.5 percent.[36]

The cost of becoming a dentist and establishing a practice has dramatically increased. In 1979-1980 the average total tuition and general

fees for the first-year student was $4590. This cost has been increasing at approximately 15% a year since 1975. Using the average figures of tuition and general fees and yearly increases of 15%, students entering dental school in the 1980-1981 academic year will pay $26,500 for a four-year education. This amount would be contingent on the present level of capitation support at both the federal and state levels which have been drastically reduced and face the probability of elimination in the near future. When adjusting for inflation, between the years of 1972 and 1979, there was a total decrease of 65% in federal funding, or, expressed annually, a decrease of 13.9% each year. This trend is expected to continue.[26]

At New York University College of Dentistry, the present tuition of over $10,000 each year would increase by approximately $4500 each year if federal and state monies were eliminated and the costs were passed on to students via tuition increases.

The average cost of setting up an office in 1969 was $28,186.[38] If this amount kept pace with the Consumer Price Index, the average cost in 1979 would have been $56,000.

Funds for dental research which could lead to improved technology in materials, new delivery systems and the prevention of dental disease, although increasing in actual dollars, are not increasing at the same rate in adjusted dollars; thus, they are in effect also decreasing (see Table 9, Appended p [9]).

Dental practice characteristics have changed over the last twenty years. The number of dentists involved in various cost-sharing arrangements has increased during this period. From 1952 to 1976, the percentage

of independent dentists claiming no partners and reporting no cost-sharing steadily declined from 74.3% to 61.9%.[36] Additionally, the marketing strategies for many dentists have changed radically in the last two years with the advent of professional advertising in various media due to a recent Federal Trade Commission ruling. The result has been the opening of many group practices which attempt to produce high volume and low cost dentistry. Whether there has been an increase in patient load due to new patients attracted to these practices or a redistribution of patients already in the dental utilization system is not known. While this non-traditional form of delivery of oral health care has not had a major impact on traditional delivery systems, it is here to stay.[39]

In 1976, 94.5% of the independent dentists employed at least one auxiliary; 47% of independent dentists employed hygienists, whereas 86.7% employed assistants. While the proportion of dentists hiring full-time hygienists doubled from 1955-1975, the rate of dentists employing part-time hygienists increased even higher--1% in 1955; 19.5% in 1975. However, the patterns of utilization vary widely. In New York State, as of January 1977, there were 28 dental hygienists, 87 dental assistants, and 44 dental technicians per 100 active civilian dentists. In relation to the national profile, hygienists and technicians were utilized at, or close to, the national average (28 and 40 respectively), but utilization of assistants lagged far behind the national average of 123 per 100 active civilian dentists. New York, which has the highest dentist to population ratio of any state in the nation, is surpassed by every state except Pennsylvania in the utilization of assistants.[3]

Future Projections

In October 1979, Dr. Henry A. Foley, Administrator of the Health Resources Administration, stated that: "Our crystal balls aren't too good at showing us exactly what the situation will be in 1990...there are just too many variables we can't predict...technological change and society's expectations to name just two." This rather bleak picture for health planners was delivered to the American Dental Students Association Meeting at which Dr. Foley concluded that, "Our emerging policy... if it is to be a truly national policy...must have a generous infusion of intelligence from the states and private sector. It must be an actual partnership document, comprising federal, state and local concerns and activities."[40]

Increased emphasis has been placed on cost-containment and manpower planning. Both state and federal funds have been allocated to investigate the anticipated utilization of oral health care and to determine the dental manpower needed to meet this demand. In this section, assumptions will be generated concerning both demand (utilization) and supply, as well as the evolution of the dental profession over the next twenty years. These predictions are based on the data presented, ten years of experience in dental education, private practice and innumerable discussions. As before, demand and supply will be separated.

Future Demand

The inflation level is expected to continue at a minimum of ten percent per year. Income, however, after adjustment for inflation, will remain the same or increase at a very slow rate. Additionally, there will be a stabilization of after-tax income, and there will be a higher

level of actual income. Assuming that the cost of dental services will continue to parallel the CPI, an increase in utilization will occur.

Education levels are expected to increase over the next twenty years, but at a slower rate than the past twenty years.[41] Increased education levels will also result in increased utilization.

The population is expected to increase at approximately one percent per year over the next two decades. This will result in an increase of 40 million people in the year 2000. Additionally, the present median age of 30 is expected to increase to 35 by the year 2000.[42] Since an increasing number of people will be in older age groups, and they will have had the benefit of conservative dentistry during their lifetimes, it is expected that an increase in utilization will occur (see Table 10, Appended p [10]).

Additionally, the Census Bureau has indicated that the population living in the metropolitan areas increased from 69% in 1970 to 73% in 1978, but it is expected to stabilize at this level.[43]

Third party coverage will continue to increase and a greater percentage of the population will be provided with either public or private plans. National Health Insurance, in the year 2000, will cover the needs of children and the elderly. Because the cost barrier will be diminished for most people and eliminated for some, there will be an increase in utilization. However, past trends in utilization with third party coverage will continue, and although there will be an increase, it will not be a marked increase.

Fluoridation of water supplies, while being the most effective public health measure to prevent dental disease, has not increased rapidly during

the past decade and will not be a significant factor in the next two decades. A considerable amount of resources would have to be used to add fluoride to water supplies of the small communities not yet fluoridated.

The percentage of orthodontics, cosmetic restorations, periodontics and preventive services will continue to increase, while there will be a decrease in extractions and fillings. This will mandate modification in future curricula.

The interaction of all these factors will result in a 15 percent increase in utilization by the year 2000.

Future Supply

The number of dentists will continue to increase with the number of dental graduates leveling off at 5460 in 1982 after the dramatic increase of the seventies.[3] The number of hygienists and technicians has already begun to and will eventually stabilize, remaining constant through the year 2000. The number of assistants will increase and a larger percentage (50%) will be formally trained due to an increase in demand by dentists whose median age will decrease and whose training will include increased experiences with auxiliaries.

The cost of becoming a dentist and setting up a traditional solo practice will continue to increase at a rate at least equal to, and probably exceeding, the inflationary rate. These costs will be compounded by the ever-increasing cost of borrowing money and anticipated elimination of capitation funding. The use of normative evaluation for dental school admissions will continue to allow an ample class size. The increased costs

will result in several options available to dentists: increased fees, decreased incomes and/or alternate methods of practicing. Increased costs to the consumer and decreased income are unlikely options. Utilizing alternate methods of practice, primarily cost-sharing arrangements, will resolve the problem. These arrangements among dentists will continue to increase during the next 20 years leading to a significant decrease in the number of solo practitioners. The percentage of dentists involved in group practice should more than double by the year 2000. The present percentage of dentists (39.1%) sharing costs today will reach 80% by the end of the century.

This increase in cost-sharing arrangements will affect dentistry in various ways. The most obvious effect will be a significant decrease in the cost of establishing and running a dental practice due to shared facilities and personnel. Cost-sharing group practices will also promote improved dentist-to-dentist support systems. Increased numbers of dentists within an office will lend an improved atmosphere of emotional support and alleviate stress factors. Additionally, increased numbers of dentists within an office will stimulate in-office peer review resulting in an overall improvement of the quality of dental services performed.

The function of each type of auxiliary will be somewhat modified and consequently the competencies which must be exhibited and the curricula designed to train auxiliaries in these competencies will change.

Future Comptencies and Curricula of Auxiliaries

According to a "Report on Allied Health Personnel,"[11] prepared for Congressional Committees by the Bureau of Health Manpower of the Department of Health and Human Services (formerly the Department of Health,

Education and Welfare), the outlook for dental auxiliaries is optimistic. From the factors addressed in past, present and future supply and demand of dental services, I think this report is overly optimistic. While I project there will approximately a 15 percent overall increase in utilization, the supply of dental personnel will be more than adequate to meet this demand. In fact, I believe that minor increases in the existing workforce and improved use of assistants could adequately handle a future increase in utilization. The supply of auxiliary personnel will soon function somewhat as an accordian. As utilization necessitates, there will be an increased demand for each type of auxiliary. Dentistry will be reactive rather than proactive in this regard. The functions of each type of auxiliary in the year 2000 will be modified and consequently so will the competencies and curricula. These changes in competencies and curricula will not necessarily indicate an increase in the length of training, but rather, administrators and educators will reprioritize existing curricula.

Dental hygienists will modify their clinical roles. As a result of increased emphasis on prevention and periodontal therapy, the role of hygienists will increasingly emphasize health education. This will involve increased interpersonal communication skills and increased training in behavioral modification techniques, as well as sufficient knowledge of procedures to provide patient education. More time in the curricula will be devoted to areas such as social psychology and other behavioral sciences, diet and nutrition, and principles of instruction and feedback.

In New York State, hygienists will perform an increased number of

functions. These functions, however, will fall into the area of periodontal treatment rather than restorative treatment. Hygienists will perform prophylaxes, remove sutures, and place and remove surgical dressings rather than place rubber dams and temporary restorations.

There will be a dramatic increase in the demand for well-trained dental assistants. This will have a considerable impact on auxiliary utilization patterns in New York State, which lags far behind the national level. This gap will diminish as a direct result of two factors: increased utilization of dental services and the decrease in the median age of the state's dentists.

Additionally, dentist initiated demand for assistants whose training is limited to specialty practice will result in different roles, and consequently, different training for assistants. The two areas from which specialty assistants will initially emerge are oral surgery and orthodontics.

In oral surgery, assistants will be further trained in cardiopulmonary resuscitation, basic sciences, internal medicine, anesthesia, analgesia, and sedation techniques, radiology and oral surgery principles.

The orthodontic assistant will be trained further in bonding attachments to teeth, prevention and oral hygiene and behavioral sciences.

Assistants will also become increasingly involved in practice management and patient education. Although most assistants will continue to function at the chairside, an increasing number will assume management positions in group practices. Consequently, additional training in management skills such as delegation, motivation, and evaluation will be necessitated. The training needed to achieve competency in patient

education will closely parallel the curricular changes addressed for hygienists. More time will be devoted to behavioral sciences, principles of diet and nutrition, and general education courses.

The most consequential change, however, will occur in the increased number of well-trained general and specialty assistants demanded. As a result there will be a professionally induced increase in the number of formal education programs.

Technicians will continue to function primarily in laboratories rather than on-site in dental practices. However, their duties will change as a result of dentists' changing case mix. An increase in cosmetic dentistry prompted by increased third party coverage, will result in the fabrication of a greater number of orthodontic appliances and porcelin crowns. Gold, because of prohibitive costs, will be replaced by different alloys and technicians will need to be trained in the manipulation of these materials.

Formal training for technicians will be minimally affected by professional advances during the next 20 years. In fact, technicians will be the only auxiliaries whose majority will continue to be trained on-the-job rather than in formal educational settings.

In conclusion, there appear to be minor changes in the offing for hygienists and technicians. Assistants, however, will move into changing roles, and consequently their competencies and the curricula designed to train these auxiliaries will continue a period of evolution.

APPENDIX

TABLE 1

PERCENT OF PERSONS WITH ONE OR MORE DENTAL VISITS WITHIN A YEAR AND AVERAGE NUMBER OF DENTAL VISITS PER PERSON PER YEAR: 1963-64 AND 1969 THROUGH 1977

Year	Percent of persons with dental visits within a year	Average number of dental visits per person per year
1963-64	42.0	1.6
1969	45.0	1.5
1970	46.8	1.5
1971	47.1	1.5
1972	47.2	1.5
1973	48.9	1.6
1974	49.3	1.7
1975	50.3	1.6
1976	48.7	1.6
1977	49.7	1.6

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Health Statistics. Current Estimates from the Health Interview Survey, United States, 1976; PHS Publication Series 10, No. 119, November 1977. Also prior issued in the same series, and provisional unpublished data for 1977.

TABLE 2

PERCENT OF PERSONS WITH ONE OR MORE DENTAL VISITS WITHIN A YEAR AND AVERAGE NUMBER OF DENTAL VISITS PER PERSON PER YEAR, BY DMEOGRAPHIC CHARACTERISTICS: 1977

Demographic characteristics	Percent of persons with dental visits within a year	Average number of dental visits per person per year
All persons	49.7	1.6
Sex		
Male	48.3	1.5
Female	51.1	1.7
Age Group		
Under 17 years	51.0	1.5
17-24 years	55.2	1.6
25-44 years	53.5	1.7
45-64 years	48.7	1.8
65 years and over	31.4	1.3
Color		
White	51.9	1.7
All other	35.4	1.0
Family income		
Less than $4,999	34.0	1.1
$ 5,000-9,999	38.1	1.2
10,000-14,999	46.8	1.4
15,000 or more	61.9	2.0
Education of head of family		
Less than 9 years	30.2	1.0
9-11 years	39.8	1.4
12 years	51.9	1.6
13 years or more	64.1	2.1

SOURCE: U.S. Department of Health, Education and Welfare, National Center for Health Statistics. Provisional data, unpublished.

TABLE 3

INCOME TRENDS

Median Family Money Income

1959	-	$ 5,660
1969	-	9,586
1975	-	14,094

Median Family Income in Terms of 1977 Dollars

1970	-	$ 15,399
1975	-	15,506
1977	-	16,060

SOURCE: Statistical Abstract of U.S., Table 742, 744. Census Bureau Library.

TABLE 4

EDUCATION TRENDS

Median Number of School Years Overall 1957 - 1979

March 1957	Total	Male	Female
14 years & over	10.7	10.3	10.9
25 years & over	10.6	10.3	10.9
March 1979	**Total**	**Male**	**Female**
14 years & over	12.4	12.4	12.3
25 years & over	12.5	12.6	12.4

SOURCE: U.S. Department of Census, Current Population Series Attainment in U.S. P-20 Series, March 57 - March 59. Census Library.

Median Number of School Years

25 Years & Over			25 Years - 29 Years		
1940	-	8.6	1940	-	10.4
1950	-	9.3	1950	-	12.1
1960	-	10.5	1960	-	12.3
1970	-	12.2	1970	-	12.6
1979	-	12.5	1979	-	12.9

SOURCE: (Pre-Publication) Digest of Educational Statistics 1980, National Center of Educational Statistics, Sept. 1980.

TABLE 5

	CONSUMER PRICE INDEX Dental Services	CONSUMER PRICE INDEX All Items
Index Base 1967	100.0	100.0
1968	105.5	104.2
1969	112.9	109.8
1970	119.4	116.3
1971	127.0	121.3
1972	132.3	125.3
1973	136.4	133.1
1974	146.8	147.7
1975	161.9	161.2
1976	172.2	170.5
1977	185.1	181.5
1978	198.1	195.4
1979	214.8	217.4

SOURCE: Bureau of Labor Statistics

TABLE 6

NUMBER OF PERSONS WITH DENTAL EXPENSE
PROTECTION BY TYPE OF INSURER
IN THE UNITED STATES
(000 omitted)

End of Year	All Insurers	Insurance Companies	Blue Cross/Blue Shield and Medical Society Plans	Other Plans
1967	4,570	2,330	20	2,220
1972	16,853	10,200	1,110	5,543
1978	60,227*	38,815	6,000*	15,412

*Preliminary Estimate

SOURCE: Source Book of Health Insurance Data, 1979-1980, Health Insurance Institute, Washington, D.C., 1980, p.22.

TABLE 7

NUMBER OF TRAINING PROGRAMS,
STUDENTS, AND GRADUATES: ACADEMIC YEARS 1977-1980

	ASSISTANTS				HYGIENISTS				TECHNICIANS			
	# of Programs	# of Students		# of Graduates	# of Programs	# of Students		# of Graduates	# of Programs	# of Students		# of Graduates
		Total	1st Yr.			Total	1st Yr.			Total	1st Yr.	
1977-1978	273	9,429	8,234	6,644	186	10,815	5,614	5,026	49	2,481	1,410	1,150
1978-1979	298	9,168	8,156	6,043	196	11,055	5,706	5,149	54	2,780	1,595	1,050
1979-1980	294	9,315	8,386	N.A.	204	10,932	5,691	N.A.	56	2,665	1,596	N.A.

N.A. = not available

SOURCE: U.S. Department of Health, Education and Welfare, Public Health Service, Health Resources Administration, Bureau of Health Manpower PHEW Publication No. (HRA) 80-21 and Unpublished Data, Bureau of Health Manpower.

TABLE 8

FEDERAL FUNDING FOR DENTISTRY
1970 - 1980

Year	Construction Aid *	Formula Grants *	Special Project Grants *	Capitation Funding **
1970	$ 29,633,000	9,204,000	12,962,000	--
1971	25,726,000	9,120,000	15,845,000	--
1972	1,268,000	34,988,000	6,773,000	34,092,261
1973	9,971,000	36,852,000	3,548,000	34,265,206
1974	12,912,000	40,391,000	6,317,000	24,458,352
1975	5,549,000	31,466,000	3,401,000	15,810,226
1976	18,899,000	21,514,000	4,634,000	15,810,226
TQ	4,490,000	--	--	--
1977	13,843,000	25,230,000	2,716,000	17,417,863
1978	-0-	27,720,000	-0-	

* SOURCE: U.S. Department of Health, Education and Welfare. Public Health Service. Health Resources Administration. Trends in BHM Program Statistics, Grants, Awards, Loans - FY 1957-78, DHEW Publication No. HRA 80-26, Feb. 1980.

** SOURCE: U.S. Department of Health, Education and Welfare. Bureau of Health Professions. Health Resources Administration. Dental School Capitation. Report to the National Advisory Council on Health Professions Education, April, 1980.

TABLE 9

APPROPRIATIONS FOR DENTAL RESEARCH
PER YEAR SINCE 1970:

Year	Dollar Amounts
1970	28,754,000
1971	35,440,000
1972	43,388,000
1973	46,991,000
1974	43,959,000
1975	49,864,000
1976	51,291,000
1977	55,573,000
1978	61,685,000
1979	65,213,000
1980	68,318,000

SOURCE: National Center For Health & Human Statistics
(Institute on Dental Health, Division of Intra-Mural Research)

TABLE 10

POPULATION PROJECTIONS

Population - expected growth by the year 2000
Pop. 1980 - 222,159,000
Pop. 2000 - 260,378,000

Age Distribution of the Population - Year 2000

17 years & under	-	65,067,000
18 - 24 years	-	24,653,000
25 - 44 years	-	75,794,000
45 - 65 years	-	59,132,000
65 years & over	-	31,822,000

Median Age of Population 1980 - 2000

1980	-	30.2 years
2000	-	35.5 years

SOURCE: Population Estimates and Projections, P-25 Series, Report 77: 40 and 60, Census Bureau, 1980.

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A PERSONNEL EXECUTIVE'S VIEW OF OCCUPATIONS PROGRAMS

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Any analysis of the competencies to be required of health occupations program graduates must be viewed through a bifocal lens. Attention to the technical competency required for entry level positions perforce is focused initially on elements contained in institution-based job descriptions. Therein lies the first problem, inasmuch as such job descriptions usually direct attention to educational requirements, while not incorporating interpersonal relationship requirements, which pervade all jobs in health care institutions. Ergo, the second focus--one conspicuous by its absence--is on life styles within such organizations.

In analyzing grievances and arbitrations, attention is quickly channeled towards the pervasive failures in interpersonal relationships, which result in terminations. Much of the problem can be attributed to poor supervision, but the role of the educator must be to prepare neophytes to the health care arena for the highly politicized and complex environment which they will enter. The elitist nature of the health care institution often comes as a rude awakening to the young have-nots who are thrust into the environment, often bringing technical skills yet with a lack of preparedness for the world of professionalism and credentialism.

Where in the curriculum for health occupations education do we find classes, let alone courses, in dealing with the parochial work

environment? The absence of communication skills is as much a problem of the entry level worker as it is for his or her supervisor. The cultural shock for the new employee of interfacing with omnipotent doctors, overworked nurses who, therefore, are less than sympathetic, harried administrators, turf conscious professionals, often leaves them with a feeling of isolation. The institutions they enter are rife with rules, replete with do-nots and characterized by a need for interdependencies, only exceeded by production lines one finds in automobile factories. Where is the preparation for this interdependency? Where is the preparation for being in on time, being in every scheduled work day, being reliant on other workers, being relied upon by other workers? Where are the courses in human relations in the curriculum?

One way to identify competencies needed for successful pursuit in health occupations, is to review those competencies which are called in question and often lead to dismissal. To do that, I have reviewed the grievances and arbitrations which occur in my institution. Although this is a limited view of one institution, because of its size--some 1200 beds, a medical school, close to 7000 employees--it must be considered a formidable sample. The majority of terminations and the large majority of grievances deal with interpersonal relationships: the employee's attitude towards his/her work, towards his/her responsibilities to the institution and to patients, and, lastly, his/her attitude towards fellow employees. The major portion of terminations is the result of poor working habits. A sampling of such problems follows:

1. Excessive latness
2. Excessive absenteeism
3. Fights with fellow employees

4. Insubordination

5. Incomplete and fraudulent record keeping

6. Inattention, lack of empathy, rudeness towards patients.

It is less than fair to attribute all of the blame to the employees, when much of the problem results from power groups of professionals and managers who relate poorly to the non-professionals. But we, as educators, would be remiss if we did not accept the need for including in our curriculum more information, courses, and exposures to the reality of life styles in health care institutions. There is no question that job responsibilities are great, and are perceived as overwhelming by many new health care workers. There is increasing contact with a burgeoning group of health care professionals, which complicates the ability to interface on a peer level. There interpersonal relationships are further exacerbated by the ever accelerating number of unions, which represent parts of the health care family.

The inability to communicate is a primary deficiency which often leads to lack of fulfillment, lack of progress, and confrontations. How to deal with impersonal organizations is a critical subject for inclusion in the curriculum.

Based upon skyrocketing costs of health care and a more sophisticated public as to medical services, one can construct a futuristic view of the health care delivery system for the 80s. I envision a structure of the health care system which includes concentration on outpatient services, acute general hospitals offering services to really sick people, and a quantum leap in the provision of health care to the chronic long-term patient along with a large increase in

facilities for the aged. Given that model, the concentration on caring for the ill and the aged is obvious. As educators we must provide the wherewithal for health care workers to deal with those two groups. Sensitivity to caring and empathy to the acutely ill or aged will be a priority responsibility of the health care employee.

With the shortage of registered nurses now pressuring a reassessment on the part of health care administrators and, specifically, directors of nursing, as to the mix of the health care team, it is not difficult to anticipate an increased need for auxiliary skills below the level of registered nurses: nonprofessional assistants to augment the services of registered nurses and doctors. In reviewing the list of Health Occupations Education in New York State dated October 1976, the category Future Health Occupations and Education Courses Under Consideration, would appear, from this vantage point, to be right on target. The Assisting classifications are, indeed, the classifications of the 80s.

Keeping in mind the need for the Assisting classifications, and an accentuating of the caring aspects of health care services for the 80s, curriculum designers should direct their attention to programs which prepare individuals for those responsibilities.

In his enormously important book, ANATOMY OF AN ILLNESS, Norman Cousins talks about the hospital "...the seemingly indiscriminate administration of tranquilizers and powerful pain killers, sometimes more for the convenience of hospital staff in managing patients than for therapeutic needs; and regularity with which hospital routine takes precedence over the rest requirements of the patient (slumber,

when it comes for an ill person, is an uncommon blessing and is not to be wantonly interrupted)--all these and other practices seem to me to be critical shortcomings of the modern hospitals."

"How do we train professionals and non-professionals to respect the dignity of the ill and the aged? Is that not a challenge for educators, as well as hospital administrators? Cousins goes on to report "One of the incidental advantages of the hotel room, I was delighted to find, is that it cost only about one-third as much as the hospital. The other benefits were incalculable. I would not be awakened for a bed bath or for meals or for medication or for a change of bedsheets or for tests or for examinations by hospital interns. The sense of serenity was delicious and I felt certain would contribute to a general improvement." How much of these disturbing practices are instigated by hospital personnel rather than by the needs of the patient? How do we impress upon health care employees to respect the person, the privacy, and the dignity of the patient? Cousins further states "I became convinced that nothing a hospital could provide in the way of technological marvels was as helpful as an atmosphere of compassion." Where in the curriculum do we discuss compassion? Where in the curriculum do we prepare new health care professionals and non-professionals to relate to the needs of the patient, psychological as well as physiological? Cousins goes on to say "But for most people the facts of hospital life involve discontinuity, fractioned care, and inadequate protection against surprise. People come and go; you make your adjustments the best you can." He continues "The central question to be asked about hospitals--or about doctors for that matter--is whether they inspire the patient with the confidence that he or she is in the right place; whether

they enable him to have trust in those who seek to heal him; in short, whether he has the expectation that good things will happen." Therein lies the challenge. Health care educators must join with health care administrators in meeting this challenge.

The curriculum should include exposure to the view of illness, the hospital, and the staff, through the eyes of the patient. All students should be impressed with the dehumanizing aspects of hospitalization. Carl Rogers once said that if you get into the castle of another man's skin and look at things through his eyes, you may change your own opinions. It is imperative that our students get into the castle of a patient's skin, and view the illness and the aging from that perspective.

I leave the discussion of the technical elements of the curriculum for the 1980s to the various experts. I send up a warning in one area. We are producing professionals, technicians, and support personnel, who are insensitive to the major purpose and rationale of the health care facility: <u>caring</u> for the ill and the aged. Such sensitivity training must be incorporated in our curricula.

Reactions to Committee Activities From the Field

The 14 Regional Observers representing the Occupational Education Planning Regions in New York State are the communications network of the Futuring project. Their function is to disseminate information of the Committee's activities to individuals in their region concerned with the work of the Committee such as Health Occupations teachers and coordinators, employers, regional professional groups, etc. and to bring back the reactions from the field to the Committee.

The basic means of communication between the Observers and the field is a Newsletter published prior to each meeting which reviews the Committee's activities, provides information of upcoming meetings, and solicits reader input. The Newsletter is published centrally with the input of the Regional Observers and distributed in each Region by the Observers. This establishes the Observer as the local contact person for information and for feedback.

Between 2,500 and 3,000 copies of each of the first three Newsletters were disseminated throughout the State. The individual regions ranged from 40 copies in the rural areas to as many as 900 in New York City. The Newsletters were sent to educators connected with Health Occupations in both the public and private sectors at secondary and postsecondary schools, prospective employers of Health Occupations graduates, appropriate local professional organizations, governmental representatives, news media, and other individuals or groups who might be interested in the program. Several hundred copies were also distributed by the Bureau of Health Occupation

to various central governmental organizations and state-wide professional groups.

The first two Newsletters asked readers to respond to such questions as whether they would like further information, join a local advisory committee or participate in a workshop. The response rate to these averaged about four percent throughout the State. The lowest interest was shown in the New York City and Long Island area while the highest response rates were in rural regions.

More responses were received to Newsletter No. 3 which was concerned with competencies required of entry level Health Occupations employees. Readers were asked to indicate what specific skills their employees are lacking on entrance, why they leave or are let go, and to describe skills needed for specific job titles. The response rate for this Newsletter has been 3% and 10% for different regions with responses still coming in. Respondents indicated that the most frequently mentioned areas where employees lack competence are: communications skills, including minimal requirements of reading, writing and clarity of expression, ability to establish rapport with co-workers and patients, unreliability, and basic employability skills. Lack of "Maturity" was also frequently listed covering such aspects as taking responsibility for one's own actions and following through assignments with integrity. Most employees who were let go were terminated for lack of the previously mentioned skills. Among the many reasons for leaving the most preeminent was that employees do not have a realistic view of what work in the Health Occupations is like, in terms of pay, hours, status and job requirements.

The general consensus was that while the Newsletter was a good means for a first contact , it was, by itself, not sufficient to explain what was happening in the Futuring project. In all cases personal contacts were found to be the most effective means of arousing recipient interest. Some Regional Observers attached personal notes to the Newsletter, followed it by telephone calls, spoke to different groups explaining the study, and even organized special meetings for interested individuals. The IRDOE staff also participated in publicizing the Futuring project by speaking at the New York State Health Occupations Association convention and the Council of Practical Nurses meeting.

The two-way communication between the field and the Review Committee will be continued by the Regional Observers and staff members using the present dissemination procedures and adding other activities if the need arises.

Mara Zibrin
Project Associate

APPENDIX

HEALTH

OCCUPATIONS

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Futuring Project Newsletter No. 1

The New York State Education Department, in cooperation with the Institute for Research and Development in Occupational Education, City University of New York, is conducting a project to examine the future of health care delivery and its impact on Health Occupations Education programming throughout the State. The special focus of this project is to look at these curricula in order to determine the degree to which they meet the needs of the health care delivery industry for prepared personnel in the 1990's to the turn of the century.

The rapid advance of knowledge, greater utilization of computers and other sophisticated equipment, increased attention to cost containment and quality control has and continues to influence the competencies, skills, and attitudes required in a large variety of health occupations. The project being started cooperatively by the State Education Department and the Institute for Research and Development in Occupational Education will attempt to assess the competencies and attitudes that are most likely to be required in the health occupations area during the next twenty years.

A statewide "blue ribbon" committee has been appointed to examine present curricula in the health occupations education area. The Committee is composed of fifteen members. In addition, 13 Regional Observers for representing the major areas in New York State in which Health Occupations Education programs are being conducted will be a permanent part of the Committee. The role of the observers will be to acquaint their communities with the activities of the committee, and in turn, provide input to the Committee from their areas.

Commissioned by Gerald L. Freeborne, Assistant Commissioner for Occupational and Continuing Education, the project is being jointly led by Dr. Ruth-Ellen Ostler, Chief, Bureau of Health Occupations Education for the New York State Education Department, and Dr. Sigmund Tobias, Project Director, the Institute for Research and Development in Occupational Education, Center for the Advanced Study of Education, City University of New York.

Members of the Statewide Committee are: A. Thomas Castelli, Director of Occupational Education, Rockland County BOCES; Dorothy E. Fisk, Director of Health Programs, Oswego County BOCES: Mary V. Wiles, Supervisor of Health Careers Coordinating Unit, New York City Board of Education; Edmund J. McTernan, Dean of School of Allied Health Professions, SUNY at Stony Brook; James McCormack, Executive Director of New York State Health Planning Commission; Lindsay Robertson, President of Northern Metropolitan Hospital Association; Robert S. Graham, Vice President of Personal Concerns Program, Equitable Life Assurance Society; Sandra P. Benedict, Director of Patient Care Services, NYS Health Facilities Association, Inc.; Michael Vanko, Associate Director for Albany Medical Center Hospital; J. Warren Perry, Professor of Health Sciences Administration, SUNY at Buffalo; August Tuosto, Vice President and Dean for Academic Affairs, New York City Community College; Joan Borum Penrose, Assistant Professor of Education, New York Institute of Technology; Stephen Bonnadonna, Vice President for Administration Nassau Hospital; Louis L. Levine, Vice President, Public Affairs, Blue Cross-Blue Shield of Greater New York; Richard A. Valente, Director of Team Programs of Dentist's/Dental Auxiliaries.

The Regional Observers and the Occupational Education Planning Regions that they represent are: (1) John C. Thomas, Coordinator of Project PEERS, Suffolk County BOCES #2; (2) Vivian Broaddus, Assistant Principal for Supervision of Health Careers, Clara Barton High School for the Health Professions, Brooklyn, and Mavis Swire, Assistant Principal for Supervision of Nursing, Julia Richman High School, New York; (3) Beverly H. Delano, Health Occupations Education Coordinator, Ulster County BOCES: (4) Angelina Rivers, Health Occupations Education Coordinator, Albany City School District; (5,6) Joyce Lemieux, Health Occupations Education Coordinator, St. Lawrence County BOCES; (7) Athalie Wylie, Health Occupations Education Coordinator, Madison-Oneida Area Occupational Education Center; (8) Elaine Senn, Instructor of Dental Assisting, Broome-East Tioga Occupation Center; (9) Julienne S. Webster, Instructor of Health Assisting, Cortland-Madison BOCES: (10) Josephine Colacino, Instructor of Nurse's Assistant Program, Finger Lakes Occupational Center; (11) Marilyn Lynough, Health Occupations Education Coordinator, Schuyler-Chemung-Tioga BOCES: (12) Mary Margaret Hahn, Health Occupations Education Coordinator, Erie County BOCES #1; (13) Marie Pavia, Instructor in Health Services, South Cattaraugus Area Occupational Center.

The first meeting of the Committee will be held at the Best Western Thruway House, in Albany, New York, from 9:30 to 5:00 on Thursday, April 24th and from 9:00 to 12:15 on April 25th.

A number of widely known experts will speak at the two-day meeting. The list of speakers on Thursday include Prof. Herbert Bienstock, currently at the City University of New York and formerly the New York Labor Statistics Commissioner, will speak on manpower projections for the Health Occupations. Professor Catherine Riessman of Smith College, will speak on sociological aspects of the Health Care Delivery System, Mr. Irwin Shenker, formerly Executive Director of Hillcrest

Hospital, and formerly Vice-president of Group Health Insurance will speak on a study that he conducted regarding new roles for health occupation graduates. Dr. Willard Daggett, Chief, Bureau "futuring" process in education. Mr. John Gall of the El Camino Hospital in the San Francisco Bay area will speak on the role of computer equipment in the Health Sciences. Dr. Clement Bezold of the Institute for Alternative Futures, Washington, D.C., will speak on possible alternative organizational structures of the health care system at the turn of the century and beyond.

The meeting on Thursday will end with a panel discussion at which speakers may comment on each other's presentations, and respond to questions from the audience.

The meeting on Friday, April 25th will be addressed by Dean Helen K. Hickey, Associate Dean of the Sargent College of Health Professions at Boston University. Dean Hickey will discuss problems in the Health Occupations from an educator's point of view. Similarly, Polly Fitz, Dean of the School of Allied Health Professions at the University of Connecticut will also speak on that topic. Finally, Ms. Beverly Campbell of the California State Education Department will discuss some curricular modifications in California in the Health Occupations areas. A panel discussion will conclude the meeting of Friday the 25th.

These meetings will be open to the public, and the attendance of interested individuals is solicited.

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TEAR-OFF SHEET

If you are interested in being informed of the continuing activities of this Committee, please fill out the following:

Name_____
Job Title_____
Address_____
(work) _____ (home)_____

_____ _____

Phone No._____ _____
(work) (home)

What suggestions do you have for the best way of examining the health occupations education curriculum?

_____

_____

In order to facilitate the work of the Committee, please suggest one of the following to facilitate the work of the Committee:

Speakers:_____
Books:_____
Articles:_____
Resources:_____

How would you like to be involved in the work of the Committee? For example, would you be interested in joining a local committee to publicize activities of the blue ribbon Committee and provide input to it?

_____

_____

Would you be interested in attending workshops devoted to Committee activities?

_____

Would you like to serve on a regional advisory committee?

_____

In what other ways would you like to be involved?

_____

_____

_____

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Futuring Project Newsletter No. 2

The first meeting of the Statewide Health Occupations Education Review Committee, with the participation of the 14 Regional Observers, was held in Albany from April 23rd to 25th. Also in attendance were staff from the Bureau of Health Occupations Education, members of the State Education Department, and other interested individuals.

Gerald L. Freeborne, Assistant Commissioner of Occupational and Continuing Education, New York State Education Department, charged the Committee with making a careful examination of the Health Occupations programs in terms of three major objectives:

1. The necessity of providing relevant skills for future employment.
2. Meeting the needs of the health industry in New York State.
3. Strenghthening the economy of New York State by providing a well trained labor pool.

Dale M. Post, Director, Division of Occupational Education Instruction and Supervision, urged the Committee to provide an effective organizational structure to assist the State's educational system in dealing with the challenges of the future. Dr. Ruth-Ellen Ostler, Chief, Health Occupations Education, posed a number of specific questions that will have to be addressed during the study. Finally, Dr. Sigmund Tobias, the Director of the project, emphasized the importance of looking at least ten years ahead since revising and implementing a new curriculum generally takes at least a decade.

June 1980

The next part of the meeting was devoted to presentations by nationally known experts drawn from areas affecting Health Occupations. Prof. Herbert Bienstock, of the City University of New York, and former Regional Commissioner of Labor statistics, projected a period beginning in the mid 1980's, in which the demand for labor will far exceed the supply. This imbalance will be brought about as the "baby boom" generation of the post WW II era is replaced by the much smaller "baby bust" group of the 1960's and 1970's as the main labor force. The health care area will be particularly affected, since the "baby boom" generation will be at an age when its health care needs will be increasing and the required services will come from a much smaller group.

Prof. Catherine Riessman, of the School of Social Work, Smith College, described a trend toward increased demands for health care for chronic, long term illnesses, and a decreased need in the area of acute and infectious diseases. She emphasized the importance of teaching health occupations personnel effective human relations techniques and warm, caring attitudes for patients' problems, as distinguished from purely technical skills.

Similar themes also emerged from the presentation by Dr. Clement Bezold of the Institute for Alternative Futures, Washington, D.C. Dr. Bezold outlined a variety of scenarios which the allied health field may be experiencing in the next 40 years, emphasizing that people will take a more active role for their well being, and that health care may involve increasing contact with a variety of health care professionals below the level of the physician, such as physical therapists, paramedics, and comparably trained individuals. These views were seconded by Dr. Robert Graham, a Committee member and Vice President of the Equitable Life Assurance Society, who described the company's efforts in developing "wellness" clinics staffed by allied health personnel below the level of physician. These programs will soon be operating at Equitable and an effort will be made to promote this notion to other large industrial employers.

Mr. Irwin Schenker, Vice President of Group Health Incorporated, and former Vice President of Hillcrest Hospital, urged a reexamination of the requirements for progressing from lower to higher levels within the health care industry. He urged the Committee to examine the question of credit for life-experience, making it easier for personnel to advance to higher career ladder positions.

Ms. Beverly Campbell, from the California State Education Department, presented the newly reorganized health occupations curriculum of that state. She described the curious paradox of an acute shortage of nurses in California despite the fact the 50,000 licensed nurses in the state were not practicing. Campbell suggested that there may be insufficient incentive to work in a variety of health occupations in the sense that the job responsibilities are great, and the financial rewards lower than can be obtained by unskilled, part time hourly workers.

Two Deans in the Health Occupations area, Helen Hickey, Boston University and Polly Fitz, the University of Connecticut, indicated that in view of rapid technological advances and changes in the structure of health care delivery systems health occupations educators will need to form new alliances to meet emerging health care needs of the '80's and '90's.

John Gall, of the El Camino Hospital in California, described the roles of computers in the health occupations area. He precipitated a lively discussion by suggesting that the assumption of a variety of repetitive duties in the health occupations by computers would both reduce the overall cost of medical care, and leave more personnel available for patient care. He also forecast increasing interaction with computers by health personnel without requiring special training, as communication with computers is simplified, such as by spoken language.

Dr. Willard R. Daggett, Chief, Bureau of Business Education, NYSED, described the application of the futuring process to the business education curriculum. He suggested that planning for the future was vital in order to meet the following challenges to education: declining enrollments, the role of women, inflation, reduced financial support of education, and the inroads of technology. In his description of the futuring process he suggested that potential employers specify the skills needed by health occupations education program graduates, and that educators decide how to organize curricula with such skills and how to optimally instruct students in those skills.

The Committee decided to have an executive meeting at its next session, on June 19th and 20th in Swan Lanke, New York. The purpose of that meeting will be to study the program structure, student enrollment, and related matters of the current Health Occupations Education curriculum. An additional objective will be for the Committee to develop a general plan and procedures for carrying out the charge of the futuring project for the next two years.

Future meetings, which will be open to the public and the press, were agreed upon as follows: the third Committee meeting will occur on September 24th and 25th, and is tentatively scheduled for Buffalo, New York; and a fourth Committee meeting for December 11th and 12th, is tentatively scheduled for the New York City Greater Metropolitan Area.

TEAR-OFF SHEET #2

If you are interested in being informed of the continuing activities of this Committee, please fill out the following:

Name_____
Job Title_____
Address_____
(work) _____ (home)_____

Phone No._____
(work) (home)

What suggestions do you have for the best way of examining the health occupations education curriculum?

_____

_____

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Futuring Project Newsletter No.3

Futuring Committee Recommends New Health Occupations Program Structure

At its second meeting, at Swan Lake, New York on June 19-20, the Statewide Health Occupations Review Committee made preliminary recommendations for a new Health Occupations program structure. Of major importance was a tentative recommendation that the present eight Health Occupations program areas be restructured to a total of only three separate program areas.

A new structure for the Health Occupations program, involving four different levels, and three program tracks was tentatively recommended by the Committee. The four levels of suggested competencies were: 1) A set of core competencies common to all occupational education programs. 2) A set of basic competencies common to all Health Occupations programs. 3) Three clusters of competencies unique to the three program areas tentatively recommended by the Committee: laboratory based programs, direct patient contact programs and indirect patient contact programs. Within each of these three unique clusters, a set of competencies specific to different job titles will also be included. Completion of one of these three program areas was tentatively conceptualized as required of support level personnel. 4) An advanced technical level of competencies unique to the three program clusters, was also tentatively recommended. Completion of these competencies would qualify individuals for advanced technical job titles within the Health Occupations. The tentative structure of this organization of competencies is outlined in the enclosed chart.

August 1980

Third Committee Meeting, September 24-26

The next Committee meeting will be in New York City beginning on the evening of September 24 and ending on September 26. At this meeting the Committee will try to specify the various competencies to be required of different Health Occupations programs. Presentations regarding previous surveys of necessary competencies will be made. In addition, personnel experts and firstline supervisors of Health Occuaptions program graduates will be recruited to provide input to the Committee regarding the types of competencies they seek in employees both at present, and projecting to the future. These experts will also be asked to indicate reasons for employee termination so as to provide insights regarding the competencies these employees are lacking.

Most of the meeting will be open to the public and interested individuals are invited to attend.

New Committee Chairman

Committee member Dr. Robert S. Graham, Vice-President of the Equitable Assurance Society has accepted the role as Committee Chair, at the last meeting. In addition to his position with Equitable, Dr. Graham is a neurologist with an adjunct appointment at Columbia Medical School, and the Columbia Presbyterian Neurological Institute.

At Equitable, Dr. Graham is formulating a program for the development of "wellness centers" to be made available initially to Equitable employees, and eventually to employees in other businesses and industries. Wellness Centers are intended to monitor various aspects of employee's health such as diet, cardiovascular fitness, substance abuse and the like. These centers will be supported by data processing systems, and are intended to be staffed by individuals with training similar to those of Health Occupation graduates. In addition, Dr. Graham has been in charge of the Personal Concerns Program at Equitable. In this program he has kept abreast of the newest developments in the treatment of a variety of disorders at different locations throughout the United States and the world. This information is useful for purposes of providing the best treatment available to Equitable's executive personnel who become subject to any of these different types of illnesses. In this capacity Dr. Graham has up-to-date knowledge regarding treatment modalities, and the types of supporting personnel implementing them.

Labor Representative Added to Committee

Ms. Donna Ahnert joined the Committee at its second meeting. Ms. Ahnert is representing the New York State United Teachers and will sit with the Committee during its future deliberations.

TEAR OFF SHEET NO. 3

We are interested in your input regarding the types of competencies required of Health Occupations Program graduates. We would appreciate your response to the questionnaire to assist the Committee in specifying the needed competencies.

1. Your relation with Health Occupations Students is primarily in the area of

   ☐ Employment ☐ Education ☐ Other_____

2. Your position_____.

3. City or town where your business or school is located._____

4. For what job titles do you hire or train entry level Health Occupations personnel?

   _____

   _____

   _____

5. (Employers only) How many Health Occupations entry level personnel are in your employment?

   ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ over 15

6. (Employers only) How do you expect this number to change?

   In the next year ☐ Increase ☐ No change ☐ Decrease ☐ Don't Know

   In the next 10 years ☐ Increase ☐ No change ☐ Decrease ☐ Don't Know

7. What skills should entry level workers have that they presently lack?

   _____

   _____

   _____

   _____

   _____

8. In your experience, what are the most common reasons why entry level employees in the Health Occupations

are let go?	leave?
_____	_____
_____	_____
_____	_____
_____	_____

9. For each job title with which you are familiar please do the following: 1) State the Title. 2) Specify what you consider the most important skills that an entry level worker in the Health Occupations should have for that title.

Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Job Title:_____ Skills:_____

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Please return the tear off sheet to your editor listed on the front page.

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Futuring Project Newsletter No. 4

COMMITTEE DEFINES COMPETENCY AREAS

At its last meeting, the Statewide Health Occupations Education Review Committee tentatively recommended that all Health Occupations Education program graduates master a cluster of competencies and content areas specified by the Committee. The areas of competency and content clusters grew out of two panel presentations by experts in the Health Occupations and by first-line supervisors of Health Occupations personnel. These panels discussed the competencies and knowledge clusters they considered vital for Health Occupations program graduates and the competencies lacked by employees which led to their dismissal.

The competencies specified by the Committee were an out-growth of Committee deliberations after the panel presentations and are listed on page 3. The table has the general competencies running down the left hand column and across the top a listing of whether these competencies were considered as necessary for all Occupational Education students, Health Occupations students, and/or needed within specific Health Occupations job titles. The Committee used a three-point scale in assigning priorities. A '1' meant to signify that those competencies must by mastered by all students. A rating of '2' meant to signify that a student should master those competencies, and a '3' indicated that it was desirable that the competencies be mastered.

Experts Address Committee

The meeting was addressed by the following personnel experts: Norman Metzger, Vice President for Personnel for Mt. Sinai Hospital and Medical School; Dr. Stuart M. Hirsch, Assistant Dean for Allied Health Programs and Acting Chairperson,

(continued on page 2)

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Experts Address Committee (continued)

Department of Operative Dentistry at the New York University Dental Center; and Sandra MacKenzie Routledge, who is a nurse-counselor at the Providence Medical Center in Seattle, Washington.

The first-line supervisors panel consisted of Joan Borden, Director of In-Service Training, St. Johnland Home in Kingsport, New York; Myra Gordon, Curriculum Director for the TEAM Program in the School of Dentistry at SUNY Buffalo; and Jean Padlo, Assistant Nursing Director at St. Francis Hospital in Olean, New York who presented a paper prepared by Mary Chicola, the Director of Nursing at that facility. These panel presentations were followed by a question period by the Committee and audience.

Upcoming Meeting in Buffalo

The next Committee meeting will be at the Executive Inn in Buffalo, New York from December 10-12, 1980. The topic for that meeting will be the constraints to the Committee's recommendations with respect to accreditation and professional certification and licensure and resources available to the Committee.

James McCormack, the Executive Director of the New York State Health Planning Commission, will consider the implications of that Commission's total health care projection for Health Occupations. National trends in credentialing will be reviewed by Dr. Benjamin Shimberg, the Associate Director of the Program Development Center for Occupational and Professional Assessment of Educational Testing Service, while credentialing from the American Medical Association's viewpoint will be considered by Dr. John Beckley, the Director of Allied Health of the American Medical Association. Similarly, a speaker from the American Dental Association will present their perspective. Also, speakers from New York State will explore the particular licensure and credentialing requirements of the State in Health Occupations.

All interested health delivery employers, professionals and educators are welcome to attend Committee meetings, other than executive sessions. For further information please contact your editor.

Reader Responses

In the last Newsletter, readers were asked to indicate what specific skills their employees are lacking on entrance, why they leave or are let go, and to describe skills needed for specific job titles. Respondents indicated that the most frequently mentioned areas where employees lack competence are communications skills, including minimal requirements of reading, writing and clarity of expression, ability to establish rapport with co-workers and patients, reliability, and basic employability skills. Lack of "maturity" was also an often listed item covering such aspects as taking responsibility for one's own actions and following through assignments with integrity. Most employees who were let go were terminated for lack of the previously mentioned skills. Among the many reasons for leaving the most prominent was that employees do not have a realistic view of what work in the Health Occupations is like, in terms of pay, hours, status and job requirements.

Areas Where Students Should Have Competence

		OE	HOE	SP
1.	Employability skills	1	X	X
2.	Communications skills	1	1	1
3.	Interpersonal skills	1	1	1
4.	Organization: management of self	2	1	1
5.	Literacy (use of libraries and computers)	1	X	1
6.	Ethics	3	1	1
7.	Stress (recognition and management)	2	2	1
8.	Human development & Sexuality	X	2	1-3
9.	Safety	1	1	1
10.	Life sciences	X	1	1-3
11.	Career orientation	3	1	1
12.	Costs	X	3	1
13.	Necessary cognitive and technical skills*			

* This category will be explored in detail at future meetings.

OE = all students in Occupational Education.
HOE = all students in Health Occupations Education.
SP = specialized programs in Health Occupations Education.

1 = students must have competence.
2 = students should have competence.
3 = it would be desirable for students to have competence.
X = does not apply, or should be primarily emphasized in other areas.

TEAR-OFF SHEET NO. 4

We would like to have your reaction to the Committee's list of areas where students should have competence and their relative importance as given in Table 1.

1) What areas in which Health Occupations Education graduates should show competence have been omitted ? How would you rate the competency areas ommitted on the scale used by the Committee?

2) Do you disagree with the rating of any of the competency areas? Which ones? How would you rate those?

3) Other comments.

NAME _____ POSITION _____

ADDRESS _____